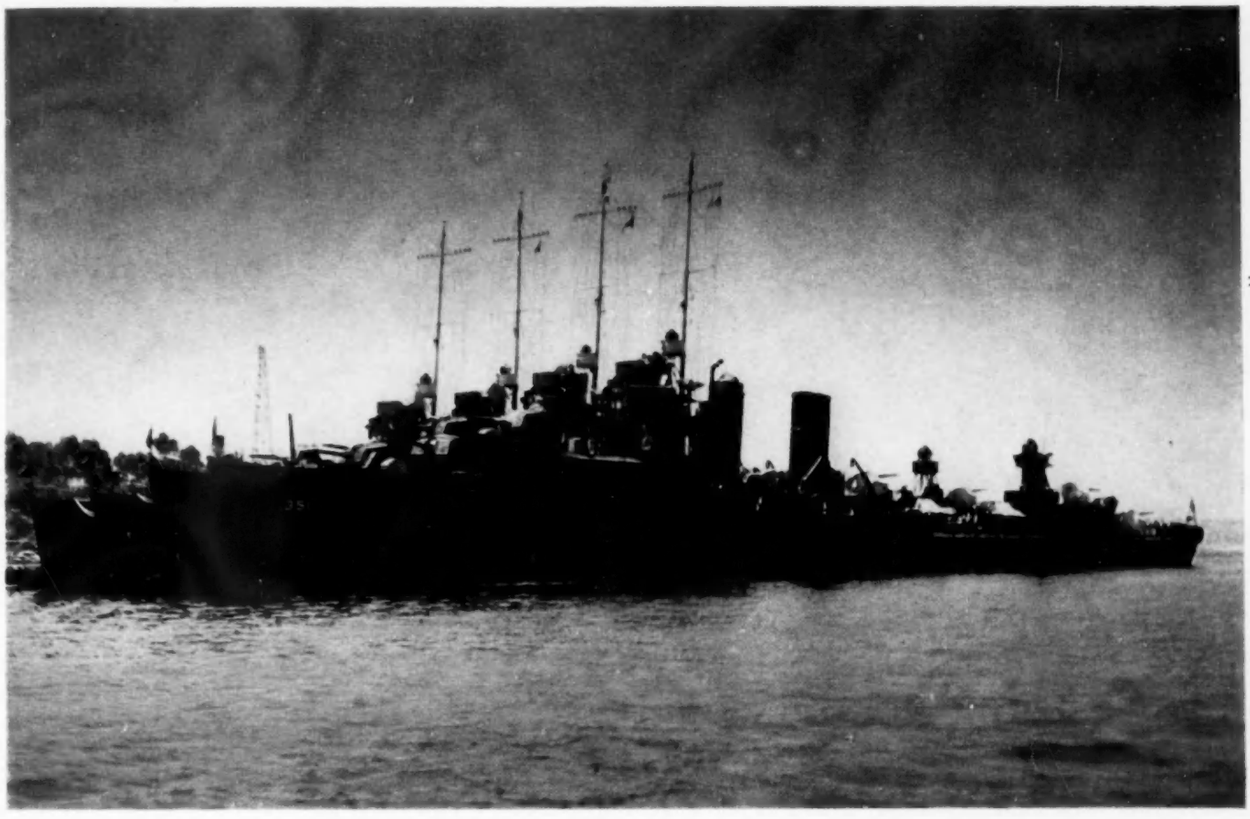

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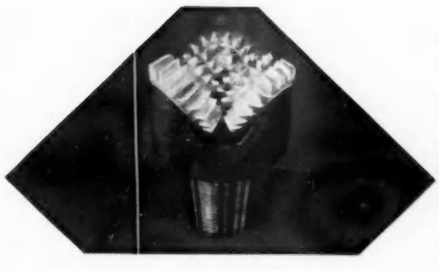

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The Oil Man's Calendar

FEB. 9–12	American Institute of Mining and Metallurgical Engineers, Annual Meeting, New York.
26–27	American Petroleum Institute Division of Production, Southwestern District, Dallas, Texas.
28	North Texas Oil and Gas Association, Wichita Falls, Texas.
MAR. 23–25	American Society of Mechanical Engineers, Houston, Texas.
APRIL 16–17	National Petroleum Association, Thirty-ninth Semi-Annual Meeting, Hotel Cleveland, Cleveland, Ohio.
21–24	American Association of Petroleum Geologists, Twenty-seventh Annual Meeting, Cosmopolitan Hotel, Denver, Colorado.
22–24	Petroleum Industry Electrical Association, Shreveport, Louisiana.
NOV. 9–13	American Petroleum Institute, Chicago.

Contents • December 8, 1941

Volume 104, Number 1

The Changing Panorama.....9

Feature Section:

Washington Roundup 11
By B. F. LINZ

Fluid Back Pressure Checks Sand Caving..... 15
By GORDON B. NICHOLSON

The Past 25 Years in Oil..... 17
By RAY L. DUDLEY

Portable Pump System Handles Output of Distillate Field 26
By ELTON STERRETT

Portable Cooling Tower Improves Rotary Mud Properties 30
By GILBERT M. WILSON

Design of Casing Strings (Part 2)..... 36
By EMORY N. KEMLER

Completions Under Month But Ahead of Year Ago.... 45

Practical Operating Hints for the Drilling Rig..... 46

Practical Operating Hints for the Production Man..... 48

News Section and Index..... 51

Looking Ahead with the Editor..... 2

Notes for the Equipment Buyer and User..... 72

Squeaks from the Bull Wheel..... 75

Index to Advertisers..... 76

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The Changing Panorama

OPC Advisory Council Is Representative

Men Selected Well Divided Between The Industry's Varied Interests

Contrary to the criticism being directed by some factions within the industry at Coordinator Harold L. Ickes' selection of membership personnel for his newly appointed advisory committee, the Petroleum Industry Council for National Defense, the group is a pretty fair representation of the industry.

Most of the criticism heard comes from independent oil men who think the council lacks sufficient representation from their group and is geographically lopsided. It should be borne in mind, in this connection, that it is a most difficult task to select a representative group of men from any big industry, but that in the case of oil the problem is more severe because it is composed of so many concerns, including both large and small and integrated and non-integrated, that it is made up of such varied interests as production, transportation, refining and marketing, and that geographically it spreads to all parts of the country.

Naturally, it is much easier to obtain representation from all the various divisions (producing, transportation, refining and marketing interests) and different geographic regions by selecting men with the large and integrated companies, due to the fact they are engaged in all branches and usually operate in many states, whereas the small independent operator generally is in but one or perhaps two of the divisions, and usually limits his activities to fairly small areas.

But OPC seems to have done a pretty fair job of not only obtaining representation from the various business phases but also from the major and independent groups. It is difficult in the case of many concerns to draw the line between so-called "majors" and "independents," but our own check of the list shows 29 members are from big companies (including three or four that can be said to be "independent" in their thinking), 25 represent independents. The latter group includes some refiners and marketers, along with producers. The other 12 members are from trade associations, and here again the division between major and independent interests, and between producers, refiners and marketers, has been pretty well accomplished.

Geographically the selections may not be quite as well distributed, principally because California has more representation than any other state. But outside of California and the Appalachian area, operations of the oil industry know no geographical boundaries, so the geographic residence of the council members is unimportant. There probably are several reasons why California has such a large number of members. It is due considerable representation because it is the second largest producing state, is a refining, transportation and marketing center as well. On this basis it might be said the size of operations in Texas should give it the greatest number of members, but many residing in other states also operate in Texas and will protect the interest of this territory as readily as that of the state in which they live. This is true of other Mid-Continent states also. In contrast, West Coast operators are more likely to limit their activities to that locality. The fact that no residents of such important states as Louisiana and New Mexico were appointed is of little importance, most of their operations being conducted by interests domiciled elsewhere, a number of whom are invited to be council members.

All in all the Petroleum Industry Council for National Defense membership is about as good a representation of all the varied interests in the oil business that could be selected, and the industry at large no doubt can count upon it doing a good job of fulfilling its purpose of acting as advisers to the Office of Petroleum Coordinator.

The committee already is quite large, having 66 members. A smaller council might have been more desirable, but Ickes apparently attempted to give all branches of the industry representation. To add additional members to please every faction of the industry probably would not increase its efficiency or benefits.

Field Supervisors Face Big Job

On Them Falls Double Burden Of Conserving Steel and Boosting Production

A big job faces the oil industry. To meet unprecedented consumptive demands, which may rise another half million barrels daily within 12 months despite the half-million-barrel-per-day gain during the past year, more wells must be drilled in order to discover more oil so greater quantities may be produced. All this is absolutely necessary, oil being so vital to the nation's defense program that failure cannot be tolerated. Somehow, and here is the rub, such expansion must be accomplished with the use of less steel, so as not to interfere with requirements of military activities and other essential work.

To a considerable extent the task of obtaining as great a volume of oil as possible with the smallest amount of steel will fall upon the industry's drilling contractors, engineers and superintendents. These men usually are in direct charge of field operations that consume the greatest portion of the industry's steel, and moreover, necessarily keep in constant and close touch with all work. Therefore they have the best opportunity of seeing that steel materials are conserved.

Upon them rests a double burden and responsibility which is going to become heavier and more important as the weeks and months roll by, and the demand for oil increases substantially while the shortage of steel grows more acute. They must see that the utmost use is obtained from all machinery, yet at the same time they cannot go so far in this direction that oil will fail to meet the enlarged demands for its products. They have an opportunity of making a distinct and valuable contribution to both the petroleum industry and to the country's defense plans by careful trading of less steel for more and more oil. Only in this way can oil meet the challenge facing it, without requiring undue quantities of steel which are not readily available except at the expense of other vital businesses.

Continuous Operation . . .

The finest in refining equipment is permitting many United States plants to operate long periods without shutting down for cleaning out or repairs. Comparatively widespread adoption of this practice as indicated by statistics on refinery operations, is an important factor in meeting the current record demand for petroleum products.

For instance, a combination high-pressure-cracking unit at The Pure Oil Company's Smith Bluff refinery recently made a continuous "on stream" run of 133 days (3192 hours). During this time 3,041,120 barrels of crude oil, 584,442 barrels of gas oil, 221,431 barrels of naphtha, or a total of 3,846,993 barrels were charged through the unit. A total of 79,650,018 gallons of gasoline were produced, sufficient at 18 miles to the gallon to travel 1,433,700,324 miles.

No Heat Shortage . . .

The possibility of a heating oil shortage on the Atlantic Seaboard, so strongly predicted during the summer that persons were urged not to buy heating oil furnaces and to be prepared to heat their homes at lower temperatures than they were accustomed, can be dismissed.

Stocks of heating oil on the Eastern Coast are now 30 percent greater than a year ago, whereas six weeks ago they were only 5 percent higher than a year ago, and three months ago they were slightly less than a year previous.

Two factors have completely dispersed the predicted shortage of heating fuel. In the first place, winter months so far have brought comparatively mild weather and the consumption of heating fuel consequently has been at a lower rate recently than a year ago. Secondly, available tanker facilities in August and September were used to bring large quantities of this commodity from the Gulf Coast to the Atlantic Seaboard. Now that the tanker shortage has been relieved by return of many of the boats loaned to Great Britain, the quantity of this commodity moving to the East continues large.

SHAKE-OUTS
From The News

An average of 21 cents of each automotive tax dollar paid by motorists in 1940 was used for non-highway purposes in the 20 states that diverted $1,000,000 or more of automotive tax funds, reports the American Petroleum Industries Committee. Out of a total 1940 automotive tax revenue of $913,306,000 in these 20 states, $193,708,000 was used for non-highway purposes. Eight states accounted for $153,998,000 or 79 percent of the diversions. In amount of diversions they ranked in this order: New York, Pennsylvania, California, Ohio, Wisconsin, Texas and Florida.

»

A new process for manufacturing high-octane gasoline has been developed by Standard Oil Company (Indiana). Because it is claimed the new process, known as "naphtha isomerization" or "isonate" for short, will increase the amount of 100-octane fuel obtainable from a given quantity of synthetics by more than 50 percent, it is expected to help relieve the shortage of high-octane gasoline required by the national defense program. It will be made available to the industry under a licensing arrangement.

The Office of Civilian Defense has established a section under Rear Admiral C. H. Woodward (DuPont Circle Building, 1344 Connecticut Avenue, Washington) for the purpose of advising industrial organizations on "Plant Protection," including the controlling and restricting of damage to plants and personnel in the event of an air raid, sabotage, or other emergency.

»

Sinclair Refining Company launched two tankers on December 6. The E. W. Sinclair launching was at the Federal Shipbuilding and Dry Dock Company, Kearny, N. J., while the Sinco was launched at the Bethlehem Steel Company yards at Quincy, Mass.

»

Tanker and barge shipments of oil from Texas and Louisiana during October increased to 42,543,040 barrels from 40,457,566 barrels in September. Of this quantity 33,216,391 barrels moved to the Atlantic Seaboard in contrast with 31,817,867 barrels in the previous months. Barges accounted for 887,952 barrels of the movement to the Atlantic Seaboard.

Many Military Uses . . .

Super-fuels for airplanes and petroleum toluol explosives claim attention as the oil industry gets into stride for national service in another great war, but at the same time hundreds of little known and unsung petroleum products are meeting special war demands. Petroleum refineries, once merely huge stew kettles which brewed kerosine or gasoline from crude oil, getting some lubricants as by-products, now are gigantic chemical factories which utilize crude oil as the raw material from which to manufacture tailor-made and essential commodities in remarkable variety and volume.

For instance, there is the case of lubricants for the bearings and surfaces of submarine fins. Ordinary grease would leave oil spots on the water surface to form a clear trial for enemies. So the petroleum industry has developed a special grease which leaves no "slick" when undersea crafts submerge. The industry is making wool oil (used in the manufacture of uniforms), to lubricate the fibres during the yarn-spinning process and thereby increase tensile strength and expedite production. Camouflage of military equipment calls for lacquers, which in turn require aromatic solvents which are being supplied by the industry in growing quantities. White oils go to the medical services of the Army and Navy. High-melting-point waxes are being used to coat ammunition, treat food packages, and serve other essential purposes. Other factions go into other specialized work. And, of course, gasoline, fuel oil, diesel fuels, oils and greases, and other petroleum products are used by the army and navy in increasing quantities.

New Priority Plan . . .

OPM has announced a new priority plan, whereby manufacturers will obtain supplies on a quarterly basis starting Janunary 1. Heretofore, materials have been obtained as needs arose. The new procedure is expected to reduce paper work entailed by separate application for each piece of machinery. On the basis of past requirements and present contracts, manufacturers are to estimate the quantity of steel needed during each three month period.

Washington Roundup

Expect William R. Boyd to be chairman of council which holds initial meeting today . . . Quick decision promised on deduction of drilling expense . . . Associations barred from discussing oil price situation

By B. F. LINZ, Washington Correspondent

THE Washington oil scene was relatively quiet during the week with the thought of industry representatives at the capitol directed to the first meeting of Coordinator Ickes' new council on December 8, at which it is generally expected William R. Boyd, Jr., president of the American Petroleum Institute, will be named chairman.

The initial meeting of the group may also reveal whether the coordinator is to take a new direction in the future as a result of the effort to centralize activities in Washington—a move which will deprive the district committees of some of their importance, although the members of the committees, as members, ex officio, of the council, will participate in the central body's deliberation.

A quick decision on whether oil companies will be permitted to deduct intangible expenses incurred in the drilling of wells by contractors was promised by the Internal Revenue Bureau as Senator Tom Connally of Texas threatened legislation covering the matter if the bureau revised its regulations to conform with a year-old decision of the Board of Tax Appeals in the Retsal Case.

The ship-construction program of the Maritime Commission is aimed to put the American oil industry in a dominant position in world trade after the war, it was disclosed during the week.

Another development was the disclosure that trade associations are barred from participation in negotiations over prices, production or other matters involving possible violations of the anti-trust laws, much to the dismay of association members who had looked to their organizations to represent them in Washington.

Things to watch: Action by the OPC to eliminate wasteful development in Illinois; appointment of C. C. Brown of Tulsa as assistant to Wirt Franklin in the District No. 2 field office; straightening out of the representation situation on the industry council by the appointment of men from states overlooked in making the first selections.

Council

Designation last week by Coordinator Ickes of 68 men to serve on the new industry council is drawing sharp criticism from independent oil men who believe that branch of the industry should be given better representation.

It is charged that not only is the make-up of the group deficient from the standpoint of equitable representation of all interests but that it is lop-sided geographically.

Analysis of the list of men invited to serve shows that three states—California, with 16; New York, with 11 and Texas, with 11—will have 38 of the 68 members.

On the other hand, no representatives whatever were selected from Indiana, Louisiana, Mississippi, Wyoming or New Mexico, all fairly heavy producers.

Furthermore, it is pointed out, Illinois has been given three representatives, but none of them are from the oil fields of the state; a number of companies will have multiple representation on the council and only a small delegation actually will be independents.

Such comment as has reached Washington does not indicate that the independent interests are pleased with the set-up, and some doubts already have been expressed whether the council will be able to operate to the satisfaction of the industry as a whole.

The make-up of the organization, by states, is as follows: Arkansas, 1; California, 16; Colorado, 2; District of Columbia, 1; Illinois, 3; Kansas, 1; Kentucky, 1; Michigan, 1; Missouri, 2; New York, 11; Ohio, 3; Oklahoma, 7; Pennsylvania, 5; Texas, 11; Utah, 2; West Virginia, 1.

On the whole, however, there is a belief that the matter of representation will be dealt with satisfactorily and there is a general feeling that the new council may be an effective means of bringing the industry and the coordinator together and of centralizing problems of coordination in Washington.

Ickes' establishment of the council, which has been urged repeatedly by industry leaders, "is a forward step in the industry's effort to obtain a better understanding of the multiplicity of problems necessarily involved in relating our activities to a national defense economy," it was commented by Russell B. Brown, general counsel of the Independent Petroleum Association.

"It indicates a desire on the part of the coordinator's office to have the cooperation of the petroleum industry and the benefit of the thought and experience of its leaders.

"There may be those who question the representation on this council and the omission of members of the industry from some of the oil producing states. This question, which will probably be clarified at the meeting Monday, is not the principal one. The primary point is that a council is being formed and that the industry is asked to confer monthly with the coordinator."

Personnel of the council was increased during the week by the naming of Parker L. Melvin, president of the Pennsylvania Grade

Crude Oil Association, Oil City, Pa., and Ralph B. Lloyd, president of the Lloyd Corporation, Ltd., Los Angeles, as members.

Drilling Expenses

Decision of the general counsel of the Internal Revenue Bureau on the question of intangible expenses incurred in the drilling of oil wells, on which a hearing was held November 3, was before Commissioner Helvering for approval this week, while at the capitol legislation was threatened if the bureau goes through with its original plan of revising its rules to conform with the decision of the Board of Tax Appeals in the Retsal Drilling Company case.

Spokesman of "Hill" sentiment was Senator Tom Connally of Texas, who had secured an opinion on the bureau's authority to ignore the tax board decision from Colin F. Stam, chief of staff of the joint committee on internal revenue taxation.

Ranking member of the Senate Finance Committee, which is in charge of tax legislation, Connally disclosed that he had written Commissioner Helvering, asking that proposed regulations, which were the basis of last month's hearing, be abandoned. Connally asserted that the regulations would be unjust and discriminatory against independent drilling contractors, who would be virtually legislated out of business, as well as against the smaller oil operators.

"Uncertainty over the bureau's decision already has created an unsettled condition in the petroleum industry and the bureau's policy should be stated clearly without delay," he said.

In the event that the proposed regulations are approved by the commissioner as written before the hearing, the senator said, an amendment will be incorporated in the tax bill which is to be written next year, restoring the privileges which would be lost to the industry under the Retsal decision.

Oil interests from all sections of the country have made the matter a major issue. A number of briefs were filed with the bureau following the hearing, and members of Congress have been appealed to for aid.

Under the Retsal decision, handed down by the Board of Tax Appeals in October, 1940, an oil company could not be entitled to deduct as intangible, drilling and development costs any portion of the amounts paid to drilling contractors under agreements for the drilling of wells at fixed prices, such as the costs incurred in the furnishing of some of the supplies required for drilling operations, some of the items of equipment, or the services of a man to supervise the drilling and the running of the casing. The board held that such contracts were "turn-key" contracts, and had no elements of contracts for the employment of labor and the purchase of equipment.

In the opinion furnished Connally, Stam held that the present law is sufficiently broad to permit the bureau to retain its present regulations.

"I believe that the regulations should not restrict the benefit of the option to the company drilling its wells and deny it to the company having its wells drilled by an independent contractor," he said.

"It would seem inequitable and seemingly harsh to allow one taxpayer to exercise the option where he purchases the material, employs workmen, and drills and equips the wells, and deny the option to another taxpayer merely because he performs the drilling through an independent contractor. This would favor the large oil companies, who could perform their own drilling, as against the smaller companies who could not do their own drilling.

"The statute is broad enough to give the commissioner power to prevent this harsh and inequitable result by the promulgation of a proper regulation."

Prices

Trade associations have been "frozen out" of all negotiations with the Office of Price Administration on the fixing of ceilings, and members of such organizations are resentful of the refusal of Price Administrator Leon Henderson to deal with the trade bodies to which they look for representation and protection in Washington.

The situation was disclosed last week in a letter by Frank Buttram, president of the Independent Petroleum Association, protesting Henderson's refusal to discuss the crude situation with him on the ground that "it is not our policy to deal with associations on prices."

In his letter, Buttram detailed the difficulties he had encountered in seeking conferences with the OPA chieftain, and said that after a week's futile effort to get a hearing he had returned to Oklahoma.

"I am sorry that you take the position that our people may not associate together for the purpose of discussing the price question with you or the members of your staff," he wrote Henderson. Buttram pointed out the impossibility, because of the time and expense involved, of all the members of the oil industry visiting Washington to discuss price problems with Henderson.

"You and your staff will need information known now only to those in the industry," he argued. "If the information and data are really desired, why should these be refused when jointly presented by individuals uniting in responsible groups?"

OPA officials admitted that they would not discuss price matters with association representatives, but explained that their position had been taken because of the anti-trust laws. They pointed out that it would be in violation of those laws for an association to work collectively on matters of prices, but at the same time contended it would be difficult to work with associations because the industry representatives would have to be checking back continuously with their individual members. At the same time, it was insisted, representatives of both small and large interests are members of the industry panels which are set up and an industry as a whole is given every opportunity to present its views at the meetings on prices.

Department of Justice officials agreed with the OPA's position, saying that they would "frown upon" efforts of trade associations to talk prices with the Henderson agency.

Although enforcement of the anti-trust laws has been directed along new lines required by the defense program, they said, it is not considered advisable to permit trade associations to participate as such in the consideration of any matters which might deal with prices, restraint of trade or other activities prohibited by the statutes.

They pointed out that while Coordinator Ickes is submitting his recommendations to the department for clearance even he does not deal with the industry's associations but directs his recommendations to the industry, or a particular branch thereof, as a whole.

The price situation also continued to receive attention in Congress, Representative Frank Carlson (Rep.) of Kansas, declaring in the House, December 4, that an "alarming" drainage of storage reserves is taking place in his state as a result of continued low prices which have discouraged wildcatting. Citing figures showing production declines in a number of states, Carlson declared "There is no doubt in my mind but

what the recent freezing of crude oil prices in the Mid-Continent region and the other oil producing areas by Leon Henderson, of the Office of Price Administration, is largely responsible for this reduction.

"Our national defense program has been predicated upon an adequate domestic supply of petroleum production, therefore it is urgent that immediate action be taken to alleviate this condition," he said.

Carlson pointed out that in the past few months refinery gasoline prices have increased 2 or 3 cents per gallon, and told the House that while the producers "are a patriotic group and individually would give liberally of their substance for the defense of our country, I do not believe they should be required to sell their product under a market ceiling when the refiners and distributors were allowed recent increases." If the industry had not been put under government control, he asserted, the present situation would not have arisen and a natural increase in the general price level of the country would have carried through in the oil industry, raising crude prices sufficiently to care for increased costs.

North Texas Price

Need for the 7½-cent increase in the price of North Texas crude to put it on a par with Oklahoma oil was laid before President Roosevelt December 5 by Representative Lyndon B. Johnson of Texas.

Visiting the White House, Johnson detailed all of the factors involved in the situation and urged the President to use his good offices to get the North Texas operators what he said was an absolutely essential increase.

Meanwhile, it was learned the question of the North Texas application was under active consideration in OPA, which was expected momentarily to pass on it. The general expectation is that the increase will be granted, possibly setting a precedent for favorable action on the applications for increases in Mid-Continent and Pennsylvania prices.

Aviation Gasoline

Top priorities were secured during the week for five more plants to produce 100-octane aviation gasoline or its components, and in addition, it was announced by Coordinator Ickes, high ratings were obtained for materials to be used in the construction of facilities for the manufacture of aviation and other special lubricating oils.

The facilities for which preferences were secured under the aviation gasoline and oil expansion program included 100-octane plants to be constructed by Cities Service Company at East Chicago, Indiana; Gulf Oil Corporation at Port Arthur, and Sinclair Refining Company at Houston; a boiler plant to power a 100-octane refinery, to be built by Panhandle Power & Light Company at Borger, Texas; an isobutane plant of Warren Petroleum Company at Tulsa; a pilot plant of Shell Oil Company at Houston; an aviation lubricating oil plant of Sinclair Refining Company at Houston, and aviation and special lubricating oil plants of Sun Oil Company at Marcus Hook, and Standard Oil of California at Richmond.

A formal recommendation proposing to refiners that hereafter all grades of aviation gasoline of 85-octane number or less be produced by addition of tetraethyl lead to a clear gasoline base stock having an octane number not greater than 67, was announced December 5 by Deputy Coordinator Davies.

The recommendation was a supplement to an earlier proposal asking the industry to discontinue the use of certain vitally essential blending agents of a petroleum origin for other than the manufacture of 100-octane gasoline.

The new order will have the effect, Davies explained, of freeing the better base stocks for use only in the manufacture of 100- or 91-octane aviation gasoline. A considerable quantity of the better stocks, particularly 73-octane clear, are being used now in the production of aviation gasoline for small planes of little defense significance, it was pointed out, and the needs for this type of use can be met by using lead in place of components necessary for the 100-octane product.

Tanker Fleet

The American tanker fleet, including the 62 vessels now being built under private contract for individual operators, 141 already scheduled and building under the Maritime Commission's program, and the 360 now in operation will total 563 oil carriers within approximately two years. The war crisis and the Maritime Commission's policy of rebuilding the American merchant marine to occupy a dominant post-war position are responsible for the vast tanker construction program which will produce 203 new tankers of 2,250,000 gross tons by December 31, 1943, or soon thereafter. The tankers now scheduled for construction will cost approximately $400,000,000, will have a total gross tonnage of 1,620,000 tons and a total capacity of approximately 900,000,000 gallons. The tankers planned by private interests will run to another 614,550 gross tons.

As a further move to meet the emergency occasioned by tanker shortages and to stop the gap until more tankers could come off the ways, the commission authorized the construction of 15 concrete bulk cargo barges, designs for which have been prepared and the contracts for the construction of which have been awarded.

Seventeen American tankers loaned to the British were returned to their owners during November, three were to be turned back this week and two more will be released on the completion of present voyages, making up the total of 40 vessels which the British agreed to relinquish, Coordinator Ickes announced during the week.

With the exception of the *J. A. Moffett* of Standard Oil of California, turned back at Providence, R. I., The Texas Company's *Pennsylvania,* turned back at Port Arthur, and Pure Oil's *2X W. E. Hutton,* returned at Smith Bluff, Texas, all of the ships released last month returned at New York, as follows: *Birkenhead,* Socony-Vacuum; *District of Columbia, Richmond* and *W. S. Miller,* Standard Oil of California; *Frank G. Drum,* Tide Water Associated; *Gulf Breeze* and *Gulfland,* Gulf Oil Company; *Hadnot,* Cities Service; *Pan Georgia,* National Bulk Carriers; *Arkansas,* The Texas Company; *Utacarbon,* Union Oil Company; *Dilworth,* Paco Tankers, Inc.; *J. Fletcher Farrell,* Sinclair Refining and *L. L. Abshire,* Sabine Transportation.

The ships to be returned this week were identified by Ickes as the *Pan Carolina* of National Bulk Carriers and The Texas Company's *Illinois* and *Mississippi.*

Eastern Stocks

East Coast stocks continued to mount during the week ended November 29, reaching a total of 66,929,000 barrels on that date, 505,000 barrels more than on November 22 and 7,036,000 barrels more than on November 30, 1940,

it was disclosed by the weekly report of the OPC.

The report showed that the deficiency in heavy fuel oils as compared with a year ago has been wiped out and the 12,539,000 barrels on hand November 29 was 27,000 barrels above the November 30, 1940, figure.

Only in crude oil do stocks remain under 1940 levels, the 12,863,000 barrels reported being short by 627,000 barrels. Gasoline stocks of 19,435,000 barrels were 2,026,000 barrels above last year, and light heating oil inventories of 22,092,000 barrels were 5,610,000 barrels above. The steady decline in the use of railroad tank cars to bring oil to the East Coast areas which began after announcement that tankers would be returned from the British shuttle service brought the number moved during the week ended November 29 to 3,065, a daily average of 438 cars and 98,550 barrels comparing with 445 cars and 100,125 barrels in the preceding week.

Shipments by companies were reported as follows: Atlanta Refining, 392 cars; Cities Service, 142; Gulf, 205; Pan-American, 163; Pure, 58; Shell, 231; Sinclair Refining, 440; Socony-Vacuum, 104; Standard of Kentucky, 61; Standard of New Jersey, 858; Sun, 18; Texas, 164, and Tide Water Associated, 229.

Illinois

Failure of Illinois to follow conservation practices acceptable to Ickes may result in OPC taking a hand in the game and the imposition of stringent controls designed to eliminate wasteful development.

Orders to bring about the adoption of conservation practices are understood to be moving back and forth between the coordinator's office and the Department of Justice, with the latter prepared to give them its approval.

OPC officials this week had nothing to say about the situation, but for several years the coordinator has been pointing to Illinois as the evil example of refusal to cooperate with other states in controlling production. It is expected that Illinois operators will find it difficult to get material under the projected OPC recommendation, a step which effectively would curtail development. There have been indications for some time that a showdown was imminent on the Illinois situation; now it is believed it will be brought under government control before Christmas.

Schedule

The schedule of OPC for the coming week includes the following meetings:

December 8: Industry Council: chairmen of the equipment subcommittee of the marketing committees, with OPC officials.

December 9: Chairmen of the general committees with officials of OPM, OPA, and OPC, on tetraethyl lead.

December 10: Manufacturers of additives with OPC officials, chairmen of the marketing committees and other industry representatives with OPA and OPC officials, on tetraethyl lead.

A meeting will be held December 15 of the container subcommittee chairmen.

Appointments

Thomas R. Weymouth, formerly vice president of Columbia Gas & Electric Corporation, New York, was appointed a consultant on natural gas in the coordinator's office, to work in the natural gas and natural gasoline section.

C. C. Brown, former vice president of Marland Oil Company and an Oklahoma tax commissioner, is under consideration for appointment as assistant production director of District No. 2.

Taxes

Premature disclosure that the Treasury was seeking a 15-percent tax on salaries and wages, to be collected at the source, and the opposition immediately voiced in Congress to such a heavy levy may force Secretary Morgenthau to abandon that plan in favor of some less drastic method of raising the money the government needs.

As a possible substitute, there are indications Treasury experts are weighing a plan to take 15 percent of earnings, but with part of the levy to be in the form of an involuntary loan, to be invested in defense bonds which would not be payable until the end of the emergency, when they would act as a cushion during the period of transition from a war to a peace economy.

Administration officials are convinced that only by taking a large slice of the increased national income will it be possible to avoid inflation as a result of dwindling supplies of non-essential civilian goods and rapidly increasing earnings.

Sales of defense bonds, originally planned for that purpose, have so far been disappointing, only about $1,775,000,000 having been secured, and there is a growing feeling that stronger methods will have to be adopted to increase sales to the figures planned by the Treasury.

Under the plan said now to be in course of development, employers would be required to withhold a specified percentage from the pay envelopes of their workers. Part of the sum withheld would go for taxes and the rest would be invested in defense stamps, which would be exchanged for bonds as the amounts accumulated. The bonds would be turned over to the individual employes, but they would not be able to cash them until after the end of the emergency.

Such a plan is believed to stand far more chance of securing Congressional approval than a heavy tax on workers' wages—particularly in an election year.

In another move to deal with the financial situation, administration officials and Congressional leaders, in the first real effort at government economy in many years, are seeking ways of lopping as much as $2,000,000,000 off the non-defense costs of maintaining the federal establishment.

The rapidly expanding defense program and steadily mounting taxes have brought loud complaint from the country over the failure to reduce waste in the more than 125 departments, bureaus and commissions which comprise the government, and have served to solidify Congressional sentiment against continued unnecessary spending.

So definite has this sentiment become that Chairman Robert Doughton of the House Ways and Means Committee is reported to have told Secretary of the Treasury Morgenthau that the House group will not consider new taxation until the administration has put a policy of economy into effect.

Two billion dollars represents only about one month's expenditure for defense under the 1942 program, but it also represents 40 percent of the $5,000,000,000 which the Treasury is said to have asked Congress to raise in another tax bill to be enacted in the near future. Members of Congress who will have to report to their constituents next year when they stand for re-election are fearful of their chances if they cannot show that the government has eliminated all unnecessary spending for the period of the emergency.

Fluid Back Pressure

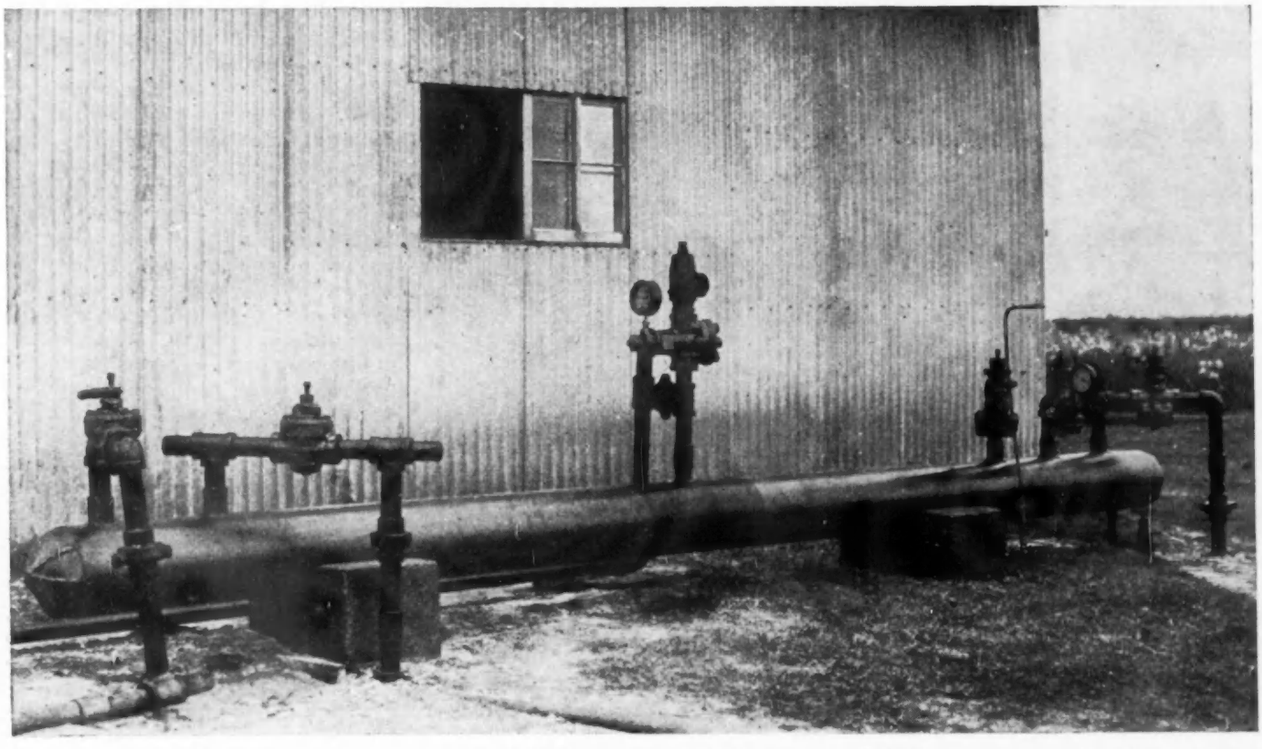
Checks Sand Caving

By GORDON B. NICHOLSON, Staff Writer

AN ENVIABLE production record in a troublesome Gulf Coast field has been achieved by a North Louisiana production company which entered the area as a newcomer faced with problems of a widely different nature than the ones to which it was accustomed. When the firm, Raymond & Brown of Shreveport, acquired producing leases in the Louise field, Wharton County, Texas, late in 1940, it stepped into the middle of an operation hindered by presence of apparently unlimited quantities of sand bearing fine shale particles which made producing the wells almost an impossibility. Ordinary production methods resulted in frequent sanding-up, screen-washing and cleanout jobs which entailed considerable expense and made economic operation doubtful, and the operators resorted to artificially flowing the wells, employing methods with which they had experience in other localities. By lifting the fluid from a high level, Raymond & Brown now hold back-pressure on the formation by means of a heavy fluid column which supports the sand. Weight of the hydrostatic head prevents the heaving or infiltration of sandy mush which formerly followed a material lowering of the fluid column.

As an abundant supply of high-pressure natural gas was not available in the Louise field, it was decided to build a compressor station to inject air into the wells for lifting fluid. The plant has been in operation for several months, with production records tabulated since completion verifying the efficiency and economy of its performance. A small corrugated iron building houses the compressor which consists of a single 2-cylinder, 2-cycle engine of 90-horsepower capacity set on concrete flooring and using lease gas for fuel. Water for the engine is supplied by a lease water well which flows prolific quantities artificially lifted by air from the compressor, while in a nearby location a large steel storage tank is equipped with a cooling tower which maintains the water at a suitable temperature for the engine. Near the engine house, a special tank is provided for storage of natural gas if in the future it is available in quantities adequate for gas lift, and the engine is adapted for conversion to compress gas instead of air.

After air is processed by the compressor, it is injected into a storage reservoir which is made of high-pressure 16-inch pipe about 20 feet



Storage reservoir for compressed air is made of 20-foot piece of high-pressure, 16-inch pipe with ends welded. Several 2-inch lines convey air from the apparatus, branching to distribute air to wells.

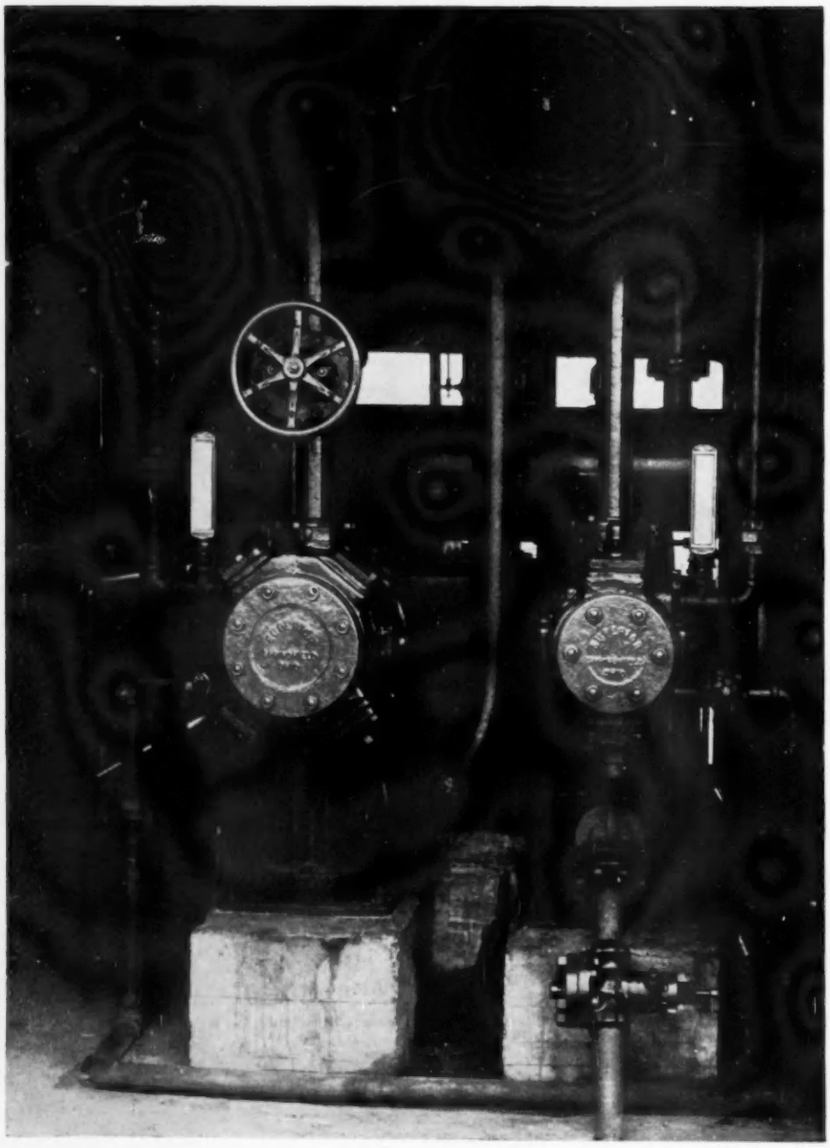
long with ends sealed by welds. Normal operating pressure in the reservoir does not exceed 375 pounds, although at times, when necessary to kick-off wells, 1000 pounds are applied. Before unloading a well for kicking-off, the remainder of wells in the system are shut in. As pressures are then confined, the compressor plant has capacity to build the maximum pressure required in less than 40 minutes, which, in addition to allowing time for the pressure storage reservoir to fill, also includes time for filling distribution lines and casings in wells to be flowed and for building up pressure to the required amount.

From the storage reservoir, compressed air leaves through several 2-inch lines, with branches extending from the main lines to the casingheads of all wells connected with the air-lift system in a pattern similar to a field gathering system. All lines in the distribution system are tested to amply withstand pressures necessary to operate, and convey compressed air to the wells serviced.

Average depth of wells in the Louise field is about 5165 feet. In determining the most satisfactory installation, consideration is given to static fluid levels and bottomhole pressures. Efforts are made to avoid establishing excessive backpressures on the formation which would retard movement of fluid. By computations made from these figures, the optimum weight fluid cushion to maintain on the producing sand is calculated, and flow equipment is installed to produce from that depth. Wells are washed to bottom with clear water and packers are set immediately below the static fluid level. In some cases, adjustments are necessary after the first installation to obtain the best results, but as an average, fluid columns approximately 2000 feet high are maintained.

Three flow collars are placed in each well, with the top two automatically closing after the fluid level in the annulus recedes while unloading the casing, and the bottom valve regulating passage of air into the tubing from the annular space for flowing the wells. Application of injected air as an additional back-pressure against the formation is prevented by the packer. A clock-controlled surface intermitter stationed near the well head regulates pressures admitted to casing and determines the flow cycle depending on the allowable and the characteristics of a particular well. The intermitters are timed to allow flowing the desired amount of fluid without completely unloading the casing below the packer or sharply reducing weight of the column of fluid on sand face, maintaining a constant back-pressure against the formation in sufficient amount to retard caving of sand into the hole. By stabilizing the fluid column in the 5-inch casing and withdrawing limited volumes, velocities in casing and at bottom of hole are slow, and there is little movement of sand. Flow cycles are frequent enough to keep the fluid in motion and prevent sand settling around valves, all sand flowing to the surface with the production. By determination and maintenance of the proper fluid cushion, however, sand content has been reduced to an average of 0.5 percent.

Nine wells are joined with the air-lift system, and are staggered in operating to avoid exhausting pressure supply or constantly keeping requirements at a maximum. Each month, approximately 16,000 barrels of fluid are lifted, of which 6000 barrels are oil and the remainder water. In ordinary operation, about 500,000 cubic feet of air are used daily to lift this fluid, with a calculated air/fluid ratio slightly exceeding 900 to 1. Operators figure the lifting cost represented is extremely low, and, while a slight emulsion occurs due to agitation by air, treating costs amount to only ⅛ cent per barrel.



Power consists of a 2-cylinder, 2-cycle, 90-horsepower engine operating on natural gas from the field. A lease water well, flowed by air, furnishes water for the engine, and a cooling tower regulates its temperature.

The Past 25 Years in Oil

1923 . . . The Rush Continues

By RAY L. DUDLEY, Publisher

THIS, the second of a series of articles that was started in the November 3, 1941 issue of THE OIL WEEKLY, reminisces on the year 1923 — which saw the intensive drilling and development campaigns, commenced in the years immediately preceding, continuing.

Additional chapters summarizing the historical developments of the oil industry during the past 25 years are to be presented in piecemeal form, a year at a time.

WHAT a year 1923 turned out to be! A year when four of the biggest oil fields the United States had ever seen were engaged in a mad production rush simultaneously—the year when California came into her own and played a part in national petroleum affairs never dreamed of when Lyman Stewart drilled the first wells for Union Oil Company at Newhall back in 1883. He lived to see the miracle, and then passed away before the year 1923 closed, one of America's greatest figures in petroleum.

Record after record fell during the year, the record for production of the United States, for production of an individual pool, for new production depths, and the Corsicana-Powell field, in the light of later knowledge, probably established a world's record for accidents.

The year also established a new record for price changes. By actual count, 26 weeks during the year saw price changes, part of the year up and part down, and so many new price fixers entered the game that one week operators saw the peculiar spectacle of one company cutting the price in a part of Texas while another was raising the price in another section.

Teapot Dome scandal was moving to a swift denouement as the year closed, amidst a flurry of resignations in official Washington such as had not been seen in more than two score years.

Annual Oil Probes

The regular annual oil probe at Washington was supplemented by such antics in the various states that when the American Petroleum Institute met late in the year the need for a more favorable type of advertising than the industry had had to date was mentioned in speeches, but the officials appeared to have the idea that the way to handle the difficulty was to establish "public relations" departments issuing favorable puffs on individual companies, and little that was constructive was actually done.

The oil probes, other than the investigation of leases of public lands, blew up with hardly a fizz, one lead by LaFollette issuing a statement of conclusions during the year which got nowhere because it was apparent even to enemies of the industry that the Wisconsin senator's "conclusions" were not based upon testimony produced before his committee, but were made up from a vast reservoir of prejudice. However, LaFollette's committee recommended a uniform system of book keeping for oil companies, not a bad idea after all, suggested that pipe lines be actually common carriers — something which already had been done in many states; recommended a ban on exports (laughable in the light of the year's later production) and said that grand jury action should be taken on the question of price fixing. It was noticeable that in spite of all efforts on the part of the committee to get testimony to sustain the charges of collusion in price fixing, none was had. Had the committee gone into the matter as to the basis of prices fixed during the previous year, it might have caused some companies to scratch their heads for reasons to sustain some prices which had been made.

In May the name of a young man down in Louisiana began to appear in the columns of the oil papers, long before it began to be seen in newspapers outside of Louisiana. As head of the Public Service Commission in Louisiana, whose other two members he dominated by reason of his personality, he started a battle with Standard Oil Company of Louisiana which was to last until his death in the Louisiana Capitol building he had built, years later. His name was Huey Long.

Price Frenzy

There is no good purpose to be served by attempting to give the gamut run by crude oil prices in 1923. They started up at the beginning of the year, went down in the summer and started up at the close.

Gravity buying was in effect and the basis of the price was so frequently shifted until it was not surprising that some operators contended the original basis for gravity buying, worth of the oil to the refiner, had been forgotten.

Promoters Pay Off

Nineteen twenty-three was the pay-off year for a number of promoters whose stock sales had flourished in the year before. A pathetic spectacle was that of an aged man, claiming descent from one of the nation's greatest figures, and claiming also to be a geologist, being sent to two years in the federal penitentiary. It developed that instead of being a geologist he had been a school janitor in Idaho, and that he was little more than a figurehead. His principals, whose names involved aliases, got 15 years each. And Dr. Cook, whose claim of discovery of the North Pole had been bitterly attacked as a hoax years previously by Com-

Santa Fe Springs shortly after discovery in 1921

modore Peary, also was convicted and sentenced to prison. These were but few of the colorful figures who paid the penalty of using the mails to defraud a gullible public.

On the labor front the year opened with reports that the I. W. W.'s were again trying to organize the oil fields. In this they were opposed by the oil companies, by state and federal authorities, and by the A. F. of L. affiliated union of oil workers. Little was heard of the movement after the first few months of the year.

California's Great Year

California held the limelight almost from the start of the year. On January the word "potential production" in California got a great deal of attention, although at that time in connection with the Los Angeles Basin fields its use was in error. Nevertheless, authorities in California were talking about a potential production of 600,000 barrels.

As the year wore on not only did the field at Huntington Beach show signs of magnitude, with new depth record for production being set, but Signal Hill and Santa Fe Springs really came into their own. In February, Signal Hill, then called the "Long Beach" field, was producing at the rate of 140,000 barrels a day. In April it had increased its production and Santa Fe Springs was doing 200,000 barrels per day. The sand at Santa Fe Springs, 1000 to 1500 feet in depth, was giving promise of long life. There were lots of blowouts and fires. It looked as though the superior engineering methods for which California had begun to establish a reputation, were to be thrown to the wind in an effort to get down to the sand. Of course there were scores and even hundreds of companies pushing the development, some of them rank amateurs, but the record awards most of the bad blowouts and fires to the major operators!

Happy Yowell made a bid for fame when he closed in a tough one for Shell at Signal Hill, a well reported to be making 30,000 barrels a day at 5050 feet. In June General Petroleum Corporation set a new world producing depth at Signal Hill, with a 4000-barrel well at 5430 feet. Shipments of crude and gasoline to the Atlantic Seaboard grew by leaps and bounds.

What California Did

To give an idea of what California actually did, a glimpse at the production records during the year is interesting. In the first week of January California was producing at the rate of 517,000 barrels, a tremendous increase over the first of the previous year. In July the state averaged 851,000 barrels daily.

At this point an effort was made to reduce the production, for fear the price would crack! Actuually the price did crack some, but the remarkable thing about the California situation in 1923 was the stability of the price in the face of the big increases in production. It was so remarkable that a friend of ours once said that it would have been most interesting if those men who fixed the Mid-Continent

How Santa Fe Springs had been developed by 1929

prices could only have taken hold in California for a while!

The peak was reached in August, when 866,000 barrels a day was produced, and pipe line proration was put into effect. An operators' committee, headed by S. A. Guiberson, Jr., was functioning to the best of its ability and the pipe line proration, originally only 30 percent and later to grow, met with almost universal approval among the operators. It did some good, evidently, because beginning with September there was a steady decline in production, a decline which probably was due to gas wastage.

Conservation Theory

It was while the cut back was in effect that THE OIL WEEKLY, in an article by its California district editor, said:

"Well informed oil men are beginning to wonder if the forced curtailment has not been a kind of blessing in disguise. It has tended to hold back the pressure and prolong the life of individual wells, and extend the life of each field as a flowing field. They maintain that more oil can be recovered from the sands by the natural pressure existing, if this pressure is held under control and made to flow the oil for as long a period as possible, than if a relatively few wells were allowed to dissipate the pressure and put the entire field to pumping."

Here was the principle of conservation by proration clearly set out—a principle which was to get many an argument in the years to come. In fact, later in the same year, John Lovejoy of Amerada Petroleum Corporation in a paper before the Tulsa Technical Club, said, "It is difficult to believe that back pressure on flowing wells is a waste rather than a conservation of natural forces. Yet this is the result of our tests on straight back pressures, although the stop-cocking method gives very encouraging results."

Corsicana-Powell

In Texas in 1923 the show was easily stolen by Corsicana-Powell, a field where there was great loss of life and property. In January the Corsicana Deep Well Corporation brought in a small producer about eight miles east of Corsicana. In May, J. K. Hughes Oil Company got a big producer on the McKie tract and while both the day and night crews were on the derrick floor, at changing time, and all were covered with oil, the well ignited. Thirteen men were reported burned to death, although bodies of only 12 were recovered by W. T. Kinley, fire fighter. A few days later Thompson Oil Company's Green Springfield No. 1 was a 12,000-barrel well, and before the close of May the field was producing 30,000 barrels per day. Acreage at Powell was held largely by the major companies and about 80 percent of the oil was produced by them, Humble Oil & Refining Company having the richest holdings.

Like Fiction

Some sidelight on the reason for the heavy rush at Powell may be seen in the commitments for millions of barrels of crude which Standard Oil Company of New Jersey (majority owner of Humble even then) was making in other states. The record of Powell's production rise and decline reads like fiction. Rigs and men were poured into Powell with one order—"get 'em down as fast as you can!" In September production had jumped to about 200,000 barrels per day, and it reached its peak of 357,000 barrels daily average for week ending November 17. The decline was almost as rapid. November 18 it was down to 291,000, and by December 21 it was down to 85,000 barrels per day, having produced in the first 11 months of its life 32,000,000 barrels.

Powell, as the field later came to be known, during its meteoric career, had set a new field production rate for Texas not to be equalled until the days of East Texas, years later.

Still another famous Texas field came into life during 1923, the Big Lake field in Reagan County,

Signal Hill in 1923

opened by the Texon Land & Oil Company with a fair well, and 1923 also saw the first flowing well in the Texas Panhandle, a well destined to start something to bear fruit the following year.

Seminole County

In Oklahoma a new area was opened up which, when the first well was completed, met with scant welcome, because Oklahoma was in such a state of over-production that a new field or two was thought sufficient to break the market completely. But Seminole County, opened by R. H. Smith's Foster 1, although it saw several good completions during the year saved itself to impose something new on the Mid-Continent a few years later.

Tonkawa was the big field in Oklahoma, and a reaction on the part of Oklahoma operators against poor results in West Texas resulted in the state getting a heavy wieldcat and proven-field play during the year. The productioin of Oklahoma tells the story—436,000 barrels on January 6, a big increase over the first of the previous year, 521,000 barrels in June and 378,000 daily average in December, and still falling. So by the time the year was out, Oklahoma was ready for Seminole, or thought she was!

Pipe Line Proration

To meet the threat of too much oil, Oklahoma pipe lines resorted first to pipe line proration, the cut ranging from 30 percent to as high as 50 percent.

But even that didn't help matters and the price fell. Pipe lines, although they bought only a portion of the oil offered, did store the remainder, and consequently 1923 was a big year for the tank builders, in Oklahoma and Texas as well.

Fourteen million dollars was paid for Indian leases in the Osage during the year.

Kansas had some threats from Western Kansas wildcats, but later years were reserved for the big development there.

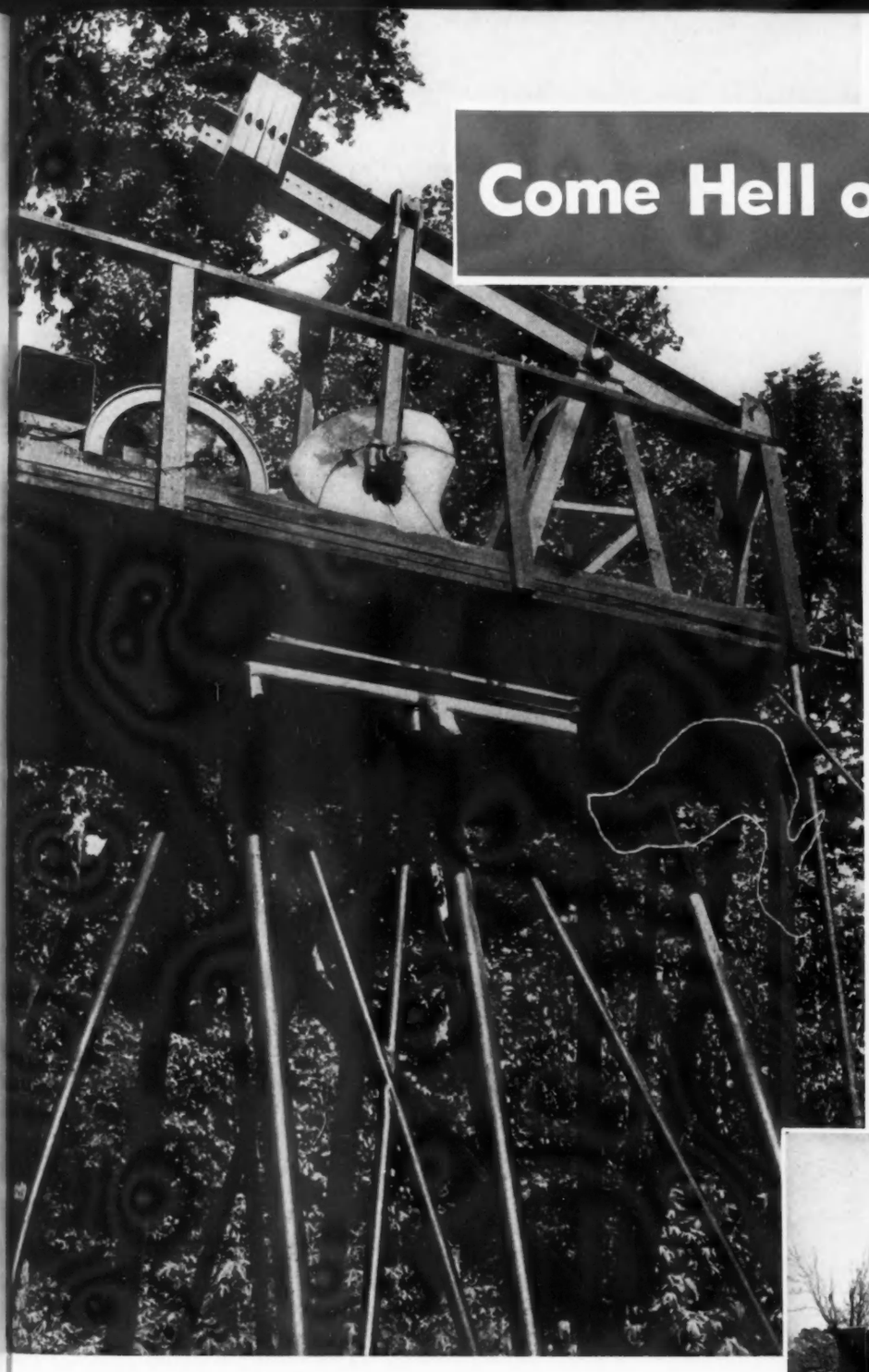
Smackover

Arkansas had her Smackover and lesser lights during the year. Poor Smackover really was the field which got it in the neck on prices, Standard Oil Company of Louisiana posting a price as low as 30 cents per barrel at one time. The Smackover field was one of many extensions. One of the best wells of the year was one brought in by the Burton Syndicate, good for 1800 barrels per hour. The production in Smackover reached its peak in July, along with the other great fields of the United States, with a daily average one week of 123,000 barrels. There was a great deal of earthen storage there and a picture of Smackover, printed in THE OIL WEEKLY, showed the field to be a series of orderly "lakes," each lake being an open, earthen tank filled with oil.

New Mexico

Imitating the Osage sales of Oklahoma, the Department of the Interior held an auction of Navajo Indian lands, or rather leases on them, in San Juan County, New Mexico, as Mid-West Refining Company had developed a small producer in that area. Twenty-one thousand acres were auctioned off by Auctioneer Walters, the veteran

"Golden Lane" at Mexia



Come Hell or High Water..

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TULSA, OKLAHOMA

Air view of the Powell field

of the Osage, for a total of $87,600, but leases near the Mid-West well found nobody interested.

The International Petroleum Exposition, although it did not have that dignified name, nor did it have the same characteristics of a present day International Petroleum Exposition, was opened in Tulsa in October, 1923. In spite of the fact that it had too much of the nature of a carnival about it, and was badly handicapped for space, it was a big success, and the groundwork for later expositions laid.

Fire Losses Heavy

A Bureau of Mines publication during the year made the statement that 5 barrels out of every 1000 barrels produced in the United States, was lost by fire.

An appropriation of $50,000 was granted by the Department of Interior to pay for special surveys of probable oil-bearing lands owned by the government.

In the Mid-Continent and on the Gulf Coast the advent of the geophysicist had been made, originally by scientists from abroad. But this was soon to change and the geophysical science, as developed in America, was to be carried to the four corners of the earth.

It was in 1923 that standardization of oil country equipment got its biggest start and actual standards were presented for discussion and adoption.

The industry adopted the A.P.I. gravity scale instead of the Baume, or rather renamed the Baumed scale "A.P.I."

Abroad in 1923

In Venezuela, V.O.C.'s No. 2 La Rosa in the Maracaibo district, turned out to be a better well than No. 1, and was rated at more than 100,000 barrels per day. Everybody was busy in Venezuela. Gulf interests took over the maritime strip along Lake Maracaibo, later to be so profitable, and while there is no published record of it, it is assumed that Pan American had secured the concession on the lake, the great reserve to be developed by Lago Petroleum Company. Geologists were busy traversing Venezuela from boundary to boundary. Report was made of a Gulf drilling operation in extreme western Colombia, the usual wild rumors of strikes, never confirmed.

The Argentine government got first production in Jujuy province.

Mexico Slipping

Mexico was gradually slipping out of the news, as the tremendous fields of the past gave way to a more conservative operation. Mexico was having more than water trouble, as the government appeared to be wanting the oil industry to produce more and more revenue. Obregon, who had moved into office by revolution, was anxious for recognition and the American government in a half hearted way was playing on that fact in trying to straighten out the differences between the American and Mexican governments.

And in Russia International Barnsdall had drilled two wells and was planning to drill six more. During the year it developed that the Royal Dutch Shell, whose Henri Deterding had scathingly denounced reports that the Shell was planning to make a deal to develop Russian properties, with the bitter remark that the Shell was not a receiver of stolen properties, made a deal to buy the year's output of the Baku fields from the Soviets.

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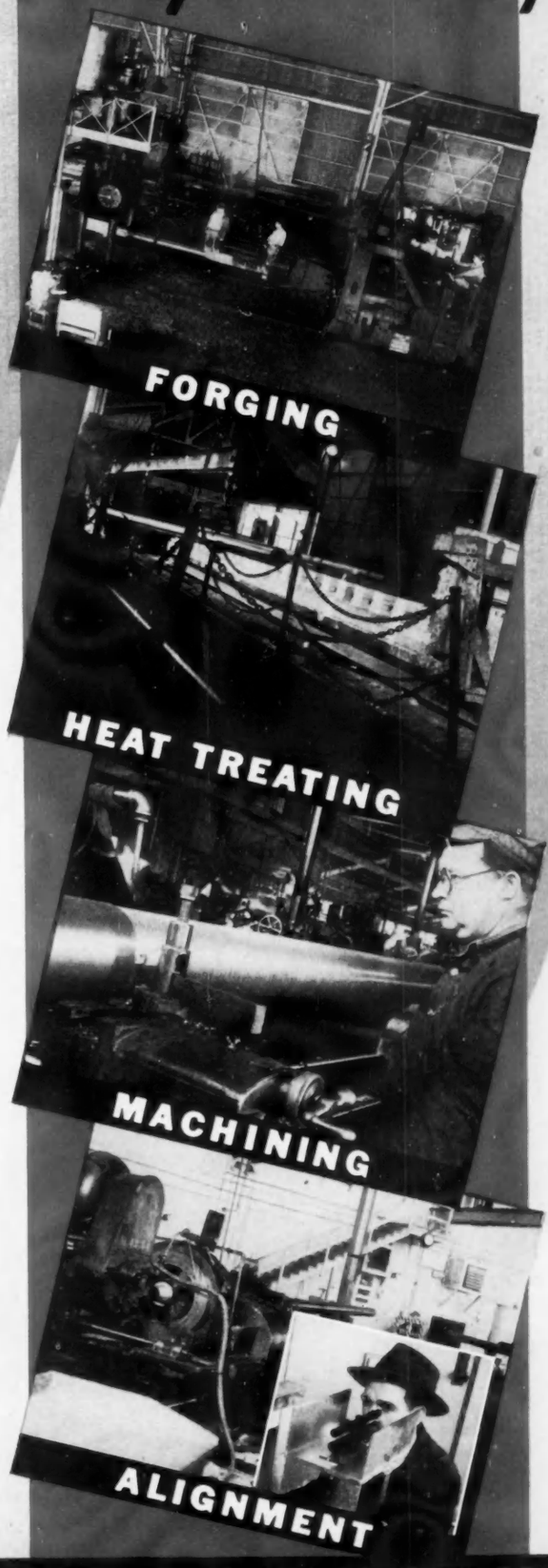


A mis-aligned drilling string is both costly and dangerous. Reed manufacturing methods produce Drill Collars of accuracy and balance and we offer the following suggestions on their care and maintenance as an aid to the protection of your investment.

- Thread protectors should be left on the drill pipe when not in use.
- Threads and shoulders should be cleaned thoroughly, removing all grease, dirt, and grit from the threads and shoulders.
- Before screwing together, both the pin and box should be doped with a good grade zinc base lubricant.
- The Drill Collar should be tonged up tightly before running in the hole. Failure to seal is due to insufficient tightness or to damage to the shoulder.
- Threads should be carefully inspected before running in the hole.
- Be sure that the drill collar has no long, unsupported lengths when placed upon the pipe rack.
- Use care in moving your drill collar to prevent damage to threads and shoulders.
- Use wraps at the middle and near both ends when lifting the drill collar.

REED ROLLER BIT COMPANY

POST OFFICE BOX 2119 HOUSTON, TEXAS, U. S. A.

Portable Pump System

Handles Output of Distillate Field

By ELTON STERRETT, Staff Writer

IN THE Chapel Hill distillate field the nature of the production imposes wide spacing, with the high gas-oil ratio affording relatively small daily liquid output per well. Due to this type of production and to its high gravity, usual methods of handling the output into pipe lines are not applicable, nor advisable, on account of the possibility of high fluid loss unless continuous supervision be present to detect and guard against leakage, line break or shutdown of the pumping unit.

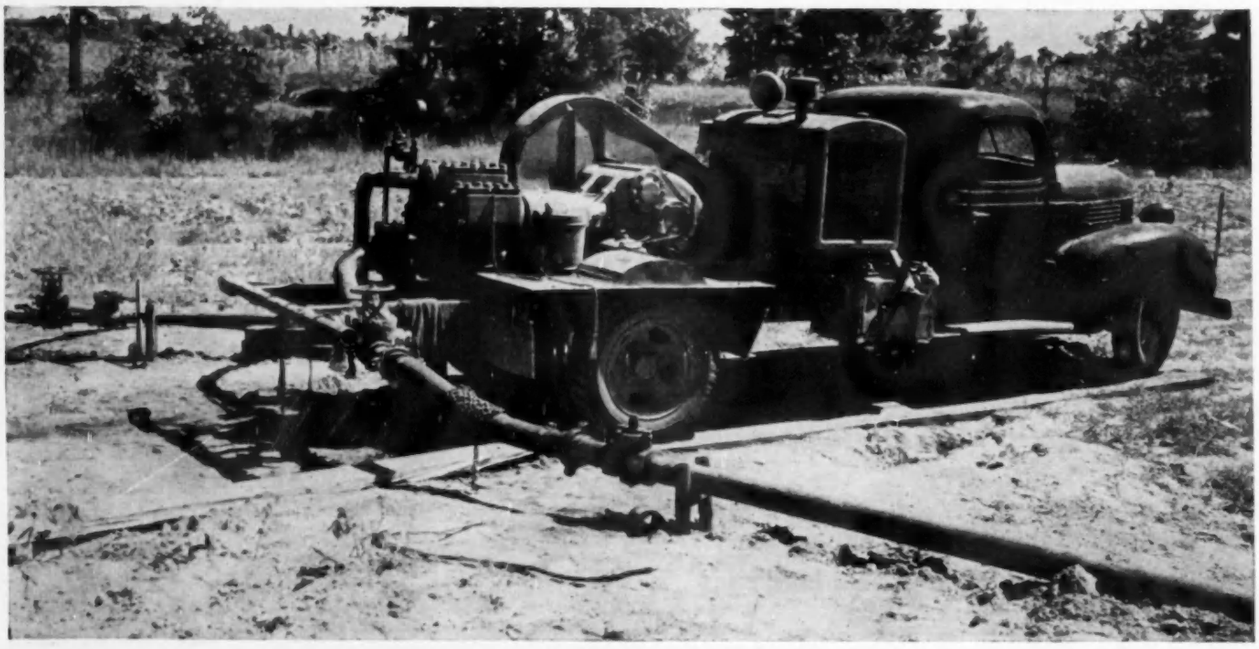
Since but one pipe line serves the field for gathering the liquid production, pumping problems have been simplified and constant supervision assured by fitting out a portable pumping plant which, taken to the various leases in rotation, empties the lease tanks, then moves to the next lease and repeats. Under this system but one lease can be on the line at any time, and possible overloading through the attempt to run a number of pumps simultaneously is avoided.

A duplex plunger pump, with integral gear reduction, is mounted on the rear end of a 1½-ton truck, with the fluid end extending across the normal rear member of the pump frame and carried on a welded extension to carry a heavy bumper out behind all pump connections.

Between the back of the truck cab a four-cylinder gas-gasoline engine is mounted transversely of the truck frame, driving the pump reduction through a multiple vee-belt drive. It is totally enclosed for safety and to minimize belt wear by protecting it as much as possible against the extremely sandy condition in the field which results in sprays of sand being deposited over all equipment with every gust of wind.

The motor is normally connected to a separate fuel tank, but may be switched to the truck supply for emergency operation, or to prevent transfer of fuel by hand should operations absorb all available supply before returning to the point of truck storage between runs.

The pump suction line is formed from three-inch pipe, bent in a wide sweep to extend from the pump intake to a point outside the extended frame, where a control valve is located. The suction line is carried below the frame, and bolted in place to avoid possible strain on the pump casting. Unions are carried on the end of the suction just outside the gate, and on the line from the tanks, just beyond the shut-off valve there. Between these unions is a short length of heavily reinforced suction hose, made with synthetic rubber to withstand the solvent action of the distillate, and with matching halves of the two unions built into



Suction side of portable distillate pumping unit, showing short hose section with pulsation-absorber of chain. Ground lines are elevated to facilitate making up of union connections.

FIG. 1501 *(RIGHT)*
CAST STEEL GATE VALVE

FIG. 1511 *(BOTTOM)*
CAST STEEL GLOBE VALVE

FIG. 1515 *(LEFT)*
CAST STEEL ANGLE VALVE

FIG. 1531 *(TOP)*
CAST STEEL CHECK VALVE

READING-PRATT & CADY Helps You Standardize on 150 lb. Steel Valves

The valves and fittings pictured above are typical examples of Reading-Pratt & Cady's extensive line of gate valves, check valves, globe and angle valves—Cast Steel Fittings for 150 lb. Service in the Oil Country. . . . Their use is indicated wherever you handle inflammable and hazardous liquids—wherever there may be surges of pressure, vibration or bending stresses not successfully withstood by iron body valves—for shut off service on tank farms—for fire fighting systems, etc. . . . Use them also for low pressure, high temperature steam—to handle exhaust steam and for auxiliary services such as injector pumps, soot blowers, condensers, heat interchangers. . . . Side wall thicknesses are greater than A.P.I. specifications and therefore promise longer resistance to corrosion and erosion.

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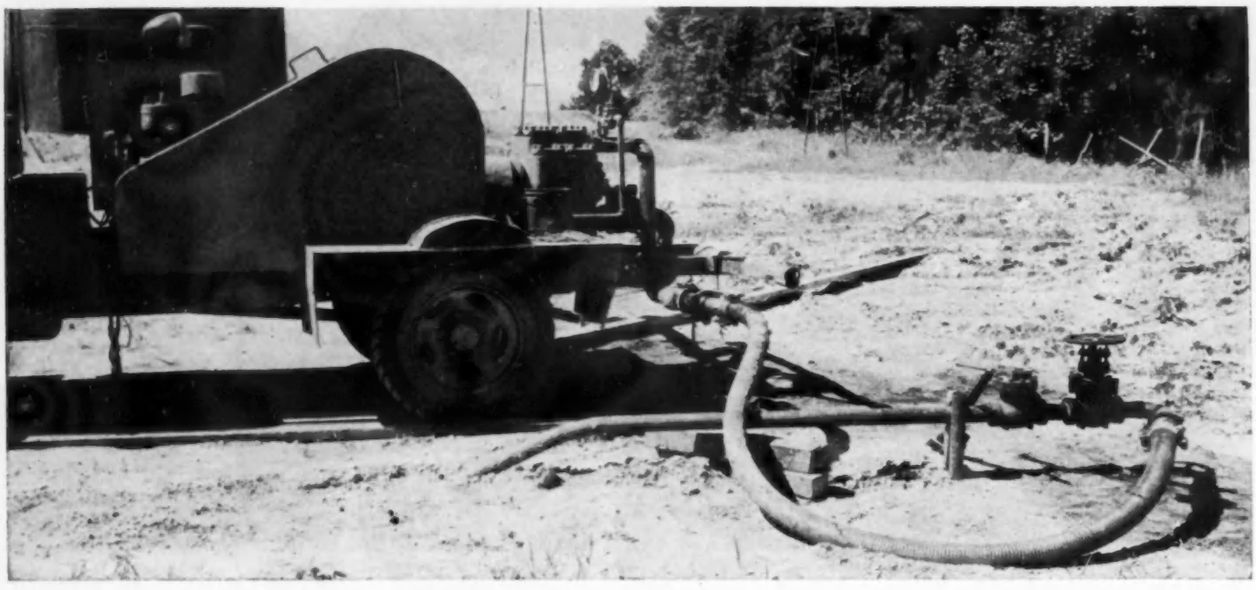


Discharge side of gas-engine driven transfer pump, showing belt drive housing and method of connecting delivery hose to tap on end of gathering system spur line to lease.

it. Since both unions are set into the line to run the same way, it is impossible to reverse the hose and possibly to match up the wrong set of threads. Since the outer end of the hose terminates in the female end of the union, the suction line at each tank battery carries only a male threaded end, it being found that this is less likely to suffer damage through collision, and as being much more easily cleaned of sand or dirt deposits accumulated in the threads between pumping rounds.

The short length of suction hose is weighted with a few feet of log chain, wrapped around the center of the free span, this weight serving to dampen out vibration which, otherwise, might become amplified by the fluid pulsations and attain a period sufficient to cause damage to the connections or loosening of the built-in ends of the hose themselves.

Discharge from the pump is taken through a valve similar to that on the suction, thence through a length of steel-reinforced hose, spirally wrapped and long enough to permit considerable variation in truck spotting without stressing hose or permanent line fittings.

The pipe line connection, buried for all but the few feet immediately adjacent to the filling point, is covered to maintain uniform temperatures and to reduce as much as possible the chance of accidental breakage and attempted pilferage. To facilitate connection of the discharge hose, and also to allow inspection of the screwed joints at the terminal for leakage, the last 8 or 10 feet of line are carried on blocks 6 or 8 inches above ground, with the check valve and control gate overhanging the last support to allow further making up of the screwed joints if this is required.

The two-inch discharge hose, equipped with paired unions similar to those on the suction, also terminates in the female half of a union, while all stubs on the pipe line are equipped with male sections. Immediately behind the valve, and providing additional safeguard against leakage in case of tampering with the master valve, is a check, top sealed on to prevent unauthorized change.

Both suction and discharge valves are equipped with similar valve stem so that one valve wheel is used to manipulate both, and the wheel is removed and carried with the pumping truck equipment, instead of being left on the lease.

Two men, a pumper and the truck driver, constitute the entire pumping gang, the pumper serving as flagman to insure proper spotting of the truck for effective hose tie-in and is responsible for the operation and maintenance of the pump equipment. The truck driver looks after his equipment and assists the pumper when necessary in making connections. The pumper also serves as gauger and checks outage and final gauges with lease switcher or gauger.

On many leases, due to the sandy nature of the soil, it has been found advantageous to build short plank runways from the highway entrance to the proper spot between the two pipe lines, the provision of the runways simplifying the spotting of the truck and saving time and effort during wet weather, when the constant vibration resulting from protracted operation of the pumping unit while the truck remains stationary tending to work the rear wheels so deeply into the sand as to require digging or even outside towing to free the unit.

Apart from extending the rear frame, reinforcing the rear springs of the truck, to provide a more steady platform for the pump mounting, and provision of extra wide and long mud guards to protect the pumping unit as much as possible from mud and sand, the truck is unchanged from the usual oil-field unit, and may be replaced by another of the same make and capacity with only a few hours work by a welder in case accident or breakdown incapacitates the one normally used for transporting the portable pump equipment.

With present production requiring the operation of the pump unit only one shift per day, with occasional over-time runs to catch up, one truck will be able to care for increasing production from the field for some time, by adding a second operating shift. If this be done, the existing field grid of relatively small pipe lines will suffice to convey all production, over the echeloned pumping plan, to the central storage for eventual shipment—all without additional equipment or raising the operating pressures above those already in use.

A DIVISION OF AMERICAN CHAIN & CABLE COMPANY, INC.

MAKE THIS CHECK WITH THE CEMENT YOU USE NOW

Note carefully the features of improved Unaflo, the oil-well cement with the retarded set

RESEARCH finally gave oil men Unaflo—the type of oil-well cement they long had wanted—the cement which, because of its retarded set, remains fluid and pumpable for extended periods under different hole temperatures and pressures. So well did Unaflo meet their requirements that oil men increased their use of it 2100% in six years. Even so, research continued—in the field, the laboratory, and the plant. The results are your gain—a still better oil-well cement—an *improved* Unaflo. Compare any cement you are using with the following features of today's *improved* Unaflo:

CHARACTERISTICS

Composition is more uniform;

Reaction to different mixing waters found on different jobs is more uniform;

Retardation of setting time under different hole temperatures is more uniform;

Stiffening of slurry is not merely "slow." It is delayed, postponed, *retarded.* It remains fluid and pumpable for period of retardation, then hardens normally.

ADVANTAGES

Less mixing water required for sustained pumpability;

Stronger, denser, more impermeable seal is obtained with the heavier slurry;

Fluidity is maintained under different hole temperatures and pressures;

Pumpability is maintained after shutdowns for extended periods.

RESULTS

Cementing economy is obtained by overcoming unpredictable hazards;

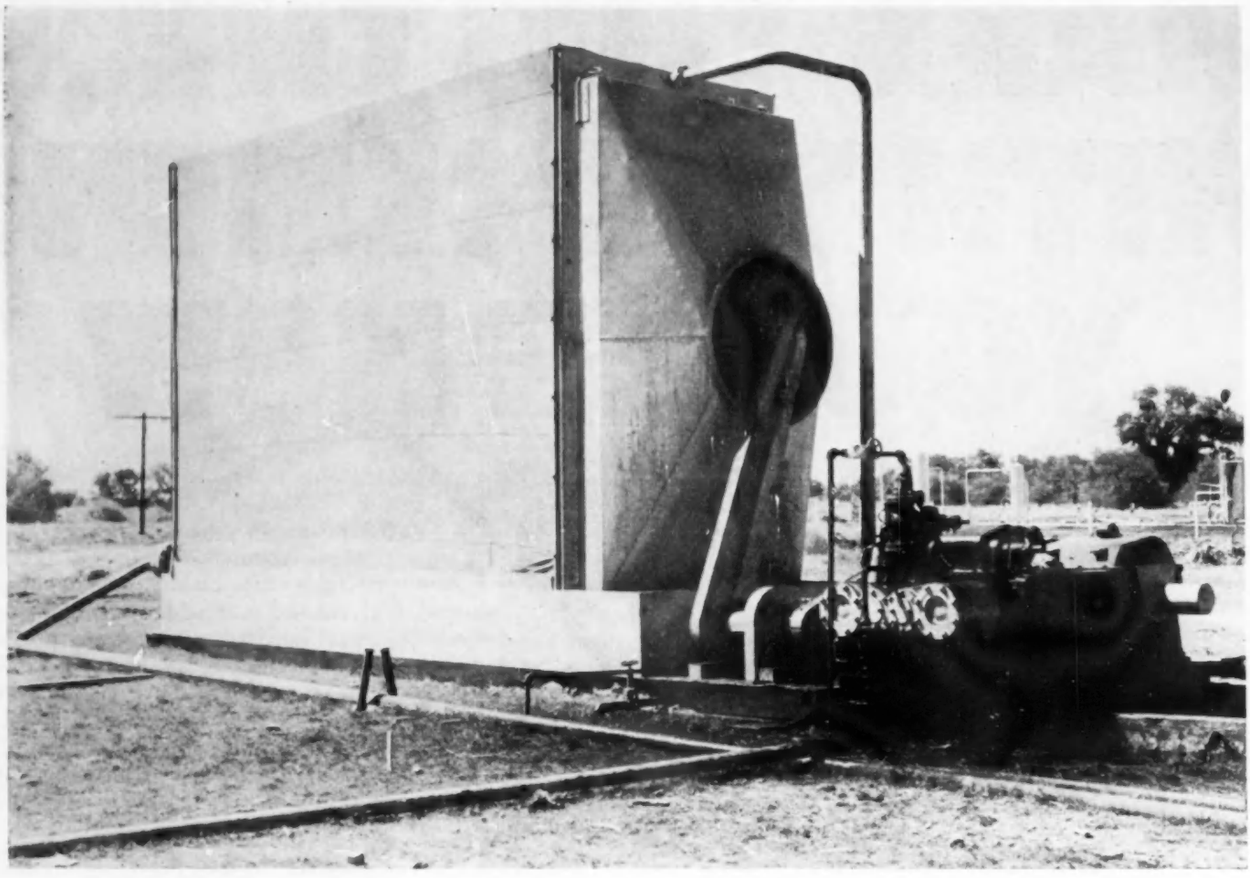
Protection of your costly investment already made in tools, equipment, and well is greater;

Insurance is increased against loss in cases of unforeseen accidents;

Factor of safety is higher.

▶ Unaflo, the *improved* retarded oil-well cement, is handled by representative dealers. Use it to protect your investment in tools and well. Universal Atlas Cement Company (United States Steel Corporation Subsidiary), Amicable Building, Waco; Oklahoma City; Kansas City; Chicago; Birmingham.

UNIVERSAL ATLAS OIL-WELL CEMENTS



Portable Cooling Tower

Improves Rotary Mud Properties

By GILBERT M. WILSON, Staff Writer

IMPROVED mud-pump operation, more satisfactory viscosity control, a thinner mud sheath, and a greatly reduced filter loss, are among the outstanding important results that are being obtained by Shell Oil Company through use of a newly developed rotary-mud cooling tower on 8000 to 10,000-foot drilling wells in San Joaquin Valley, California.

Mud temperatures which, without the cooler, would ordinarily range between 135 and 145° F. at these depths, are now being lowered to and held at between 110 and 115 degrees, through the use of a skid-mounted portable cooling tower, which in most outward appearances closely resembles an ordinary water-cooling tower. The mud is circulated, however, through a closed system of small piping which is cooled by a combination of water spray falling from an overhead sprinkling system, along with a forced draft created by a 4-foot propeller-type fan mounted in a metal hood in one end of the tower. A small steam engine supplies the economical power which drives the fan and centrifugal water-circulating pump.

Original experimental work which led to the designing and development of the present type of cooler, was conducted at a time when one of the company's wells was being drilled on the shore of Buena Vista Lake in the San Joaquin Valley. Pipe was laid out in the shallow water along the shore, and the drilling mud, picked up at the well from the downstream side of the mud shaker, was circulated through the line. The improved properties of the mud which resulted from that amount of cooling, gave an indication of the degree to which mud temperatures could be lowered by a closed cooling system, and with the aid of the data obtained, the portable cooler was designed.

The cooler is built upon two 30-foot H-beam skids set 8 feet apart. A 4-inch drill pipe draw bar is welded across at each end near the turned-up skid ends. The actual body of the cooling tower is 20 feet long, and rests on a 2-foot deep steel water tank that runs the full length of the tower. The over-

OIL WEEKLY EDITION

BAASH ROSS News

BAASH-ROSS TOOL COMPANY / LOS ANGELES • HOUSTON • NEW YORK

A MONTHLY BULLETIN COVERING NEWS OF EQUIPMENT AND OPERATIONS IN THE PETROLEUM INDUSTRY

Inside Facts: HOW B-R FISHING TOOLS ARE ENGINEERED FOR POSITIVE RELEASE IN EMERGENCIES

Grip Alone is not Enough — A SAFE Grip is The Important Thing to Look For!

Ask an experienced oil man what are the most important features he wants in a spear or socket and he'll tell you . . .

First . . . I want to be mighty certain that, once I've taken a hold on a fish, I can get *off* again whenever I have to.

And . . .

Second . . . I want a tool that won't batter up the fish . . . nor bulge it . . . nor split it, preventing further operations.

And he's right. Because almost *any* spear or socket will catch hold of a fish. *But what happens AFTER it catches hold, is the important thing to look for.*

Which brings up one of the big reasons why Baash-Ross fishing tools are so downright dependable in *any* emergency—*at any depth.* They're engineered, not only to take *hold* of the fish, but to take a *safe* hold *and then to release again whenever necessary!*

▶ To show you just what we mean by "engineering" a tool for positive release, let's take a look at the Baash-Ross Rotary Releasing Spear. Unlike many spears, *all* of the releasing mechanism in this tool is completely BELOW the slips and out of the way of jarring and pulling operations. After you have taken hold of the fish you can jar the daylights out of it. You can pull. You can twist. *But not one bit of these strains is transmitted through the releasing device.* That's why it's always ready for release when you want to get off the fish.

▶ **But even** more important is the fact that the slips on this spear are *FLAT-backed* . . . and work against a FLAT-faced taper. This is one of the most important features ever built into a spear, and here's why . . .

In the usual construction of a *round*-backed slip working against a tapered cone, there is only ONE spot where the cone and the slip fit perfectly—just one point where the cone gives full backing to the slip. Above this point, only the outer edges of the slip touch the cone *and the entire center is unsupported.* Below this point, only the center of the slip touches the cone *and both of the sides are unsupported.* In either position, the result is the same. A stress is placed on the slip that tends to break it vertically down the center . . . and once you split your slips on a fishing job, you're lucky if you *ever* release!

▶ **To visualize** just what we're talking about, do this. Take a card, and, with a paper punch, punch out a half circle in one edge. Now hold that arc up against the cone-shaped point of an ordinary pencil. Notice that there's only ONE spot where that half circle fits the cone (fig. 1). Lift it above that spot and only the edges touch, leaving the center completely unsupported (fig. 2). Drop it below that spot and only the center touches, with both sides unsupported (fig. 3).

Fig. 1

Fig. 2

Fig. 3

The principle is exactly the same on a full-length slip . . . which explains why ordinary *round* backed slips frequently break and jam when the going gets tough. In their "set" position the chances are against their having full support by the cone . . . and a heavy strain jams or breaks them.

▶ But the *flat* surfaces of the Baash-Ross Spear prevent this danger. The slips get maximum support regardless of how far up or down the taper they work. There is no risk of splitting the slips and freezing the tool no matter how hard you jar. Nor is there any danger of concentrating the slip pressure so as to damage or split the pipe. All the slips are unitized by an "alignment collar" . . . move as a single unit in gripping the pipe, thus insuring a *uniform* grip at all points.

There are still other important safety features built into this tool . . . features your nearest Baash-Ross representative will be glad to go over with you in detail. It will pay you to know about them when a fishing job comes along, so why not ask to have them explained now.

(Leased in U.S.A.—Sold for export only)

Unique Socket Design Insures Safe Grip on Fish

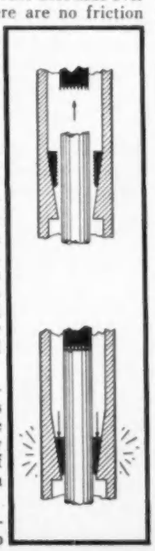
As every oil man knows, there are two kinds of fishing jobs . . . those where you catch the fish from the inside, and those where you catch it on the outside.

For an inside grip, the Baash-Ross Spear described at left is your safest bet. And when it comes to taking an *outside* grip on the fish, the tool to use for SAFE fishing is the **Baash-Ross "Type B" Rotary Releasing Socket.** Here's the reason . . .

Unlike conventional sockets, this socket is so engineered that you get a full, positive grip on the fish every time . . . a grip *automatically* spaced a short distance *below* the top of the fish where danger of crimping or bottlenecking the pipe is at a minimum.

This Is How It's Done:

As the Baash-Ross Socket descends over the top of the fish, there are no friction springs or dragging slips to interfere. Instead the slips remain fully retracted until the top of the fish is *completely into the socket.*



When completely in, the fish contacts the sharp-toothed face of the slip holder and—by holding this part against rotation—permits the slips to be released. Then, as the tool is lifted slightly, the slips are automatically forced into gripping contact by the pressure of a coil spring.

This important operating safeguard insures easier entrance of the fish . . . and practically eliminates all chance of catching the fish with only a partial grip.

Furthermore, it insures a full-length grip taken *below* the top of the fish where danger of crushing the pipe is far less than at the top.

▶ This is why the Baash-Ross Socket will not deform the fish—because it takes its grip where the pipe is solid and able to withstand heavy pulling and jarring strains.

Another thing. In this B-R Socket each of the three slips is joined at the top into one unit. They move as a unit, grip as a unit, to give you an equally-balanced grip all the way around the fish. This protects against slip breakage . . . prevents them from "crawling" and chewing the pipe, thus insuring quick, clean release the instant it is desired. And the slips can be repeatedly set and released as often as desired without coming out of the hole.

Next time you're in need of fishing equipment remember that with Baash-Ross tools you can always be sure of a good solid grip that won't deform the pipe . . . and you can be equally sure of positive release no matter how long or hard you jar. These tools are *engineered* that way!

(Leased in U.S.A.—Sold for export only)

MANY OPERATORS BELIEVE that some of the success attributed to spotting oil to free pipe is actually due to alternate starting and stopping of pumps during this operation. Therefore, before resorting to oil spotting, such operations as starting and stopping pumps and "water hammer" should be given a thorough trial.

B A A S H - R O S S

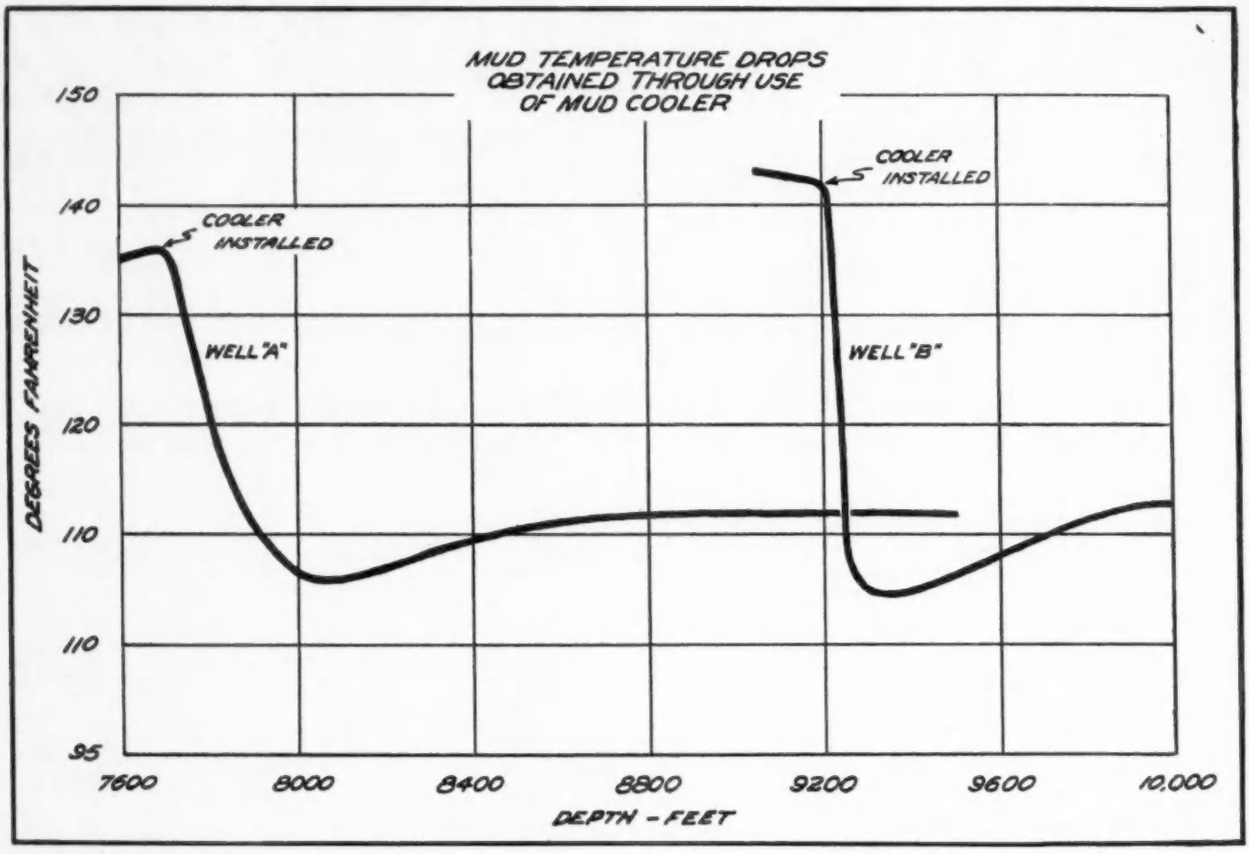
INCIDENTALLY, have you tried spotting *water* to free pipe, instead of spotting oil? Many operators prefer it, especially if mud is composed of costly admixtures, for oil has a ruinous effect on mud. Procedure is to pump clear water from suction pit into well and divert mud thus displaced into the reserve pit. Water has been used for this operation for as long as six hours without damaging hole walls.

B A A S H - R O S S

WHEN DRILLING IN CAVING or heaving formations where pipe can stick easily, it's a good idea to place a safety joint in the string just above where caving is liable to occur. Should the pipe freeze, the string can be quickly disconnected at the joint and pulled out of the hole. Baash-Ross has recently developed a new drilling type Safety Joint that's just the thing for this.

B A A S H - R O S S

FREQUENTLY, FISHING JOBS are caused by the use of tapered drill collars in a key-seated hole. The collar can become stuck so tightly because of its wedging action that it cannot be spudded or rotated loose. However, running a square-shouldered sub on top of the collar—equal in diameter to the largest diameter of the collar taper—has been found to be an effective safeguard against this trouble.



all height of the cooling tower is 16 feet 8 inches.

On the front end a 4-foot, 8-blade, adjustable pitch V-belt-driven propeller fan is mounted inside the opening of a conical riveted-sheet-iron hood. The 9 by 8 steam engine that supplies power for running the fan and 6-inch water circulating pump is mounted on a separate skid base, the latter being bolted to the end of the tower skids during the time that the cooler is set up at the well. All counter-shafting units are permanently mounted on the tower skids.

The cooling tower element is built in two detachable horizontal sections. The lower section is made up of the framework that contains 82 "passes" of ¾-inch extra heavy seamless pipe through which the mud flows while giving up much of its heat. Each pass consists of a vertical flat coil of 11 approximately 6-foot lengths of the pipe. Each coil is connected top and bottom to extra heavy seamless 6-inch pipe headers. The mud from the well enters through the upper end of the coil, and passes out through the lower header. This lower section of the tower rests directly upon the open top of the 2-foot deep steel tank. The tank runs the full length of the tower,

Cooling Data

Data taken from a drilling well on which the mud cooler had been installed, showing the amount of heat that is removed from the mud at the various depths.

Depth	Average Pumping Rate—Bbls/Min.	Degrees F. of Mud In and Out	Heat Removed from Mud Btu/Hour
6308–6354	11.9	105–90	3,640,000
6354–6717	12.4	101–93	2,020,000
6717–6861	12.3	102–94	2,005,000
6861–7048	13.0	102–94	2,120,000
7048–7211	13.0	102–94	2,120,000
7211–7338	12.1	101–94	1,730,000
7338–7481	12.1	102–95	1,730,000

and its supports lie flush with the top of the skids.

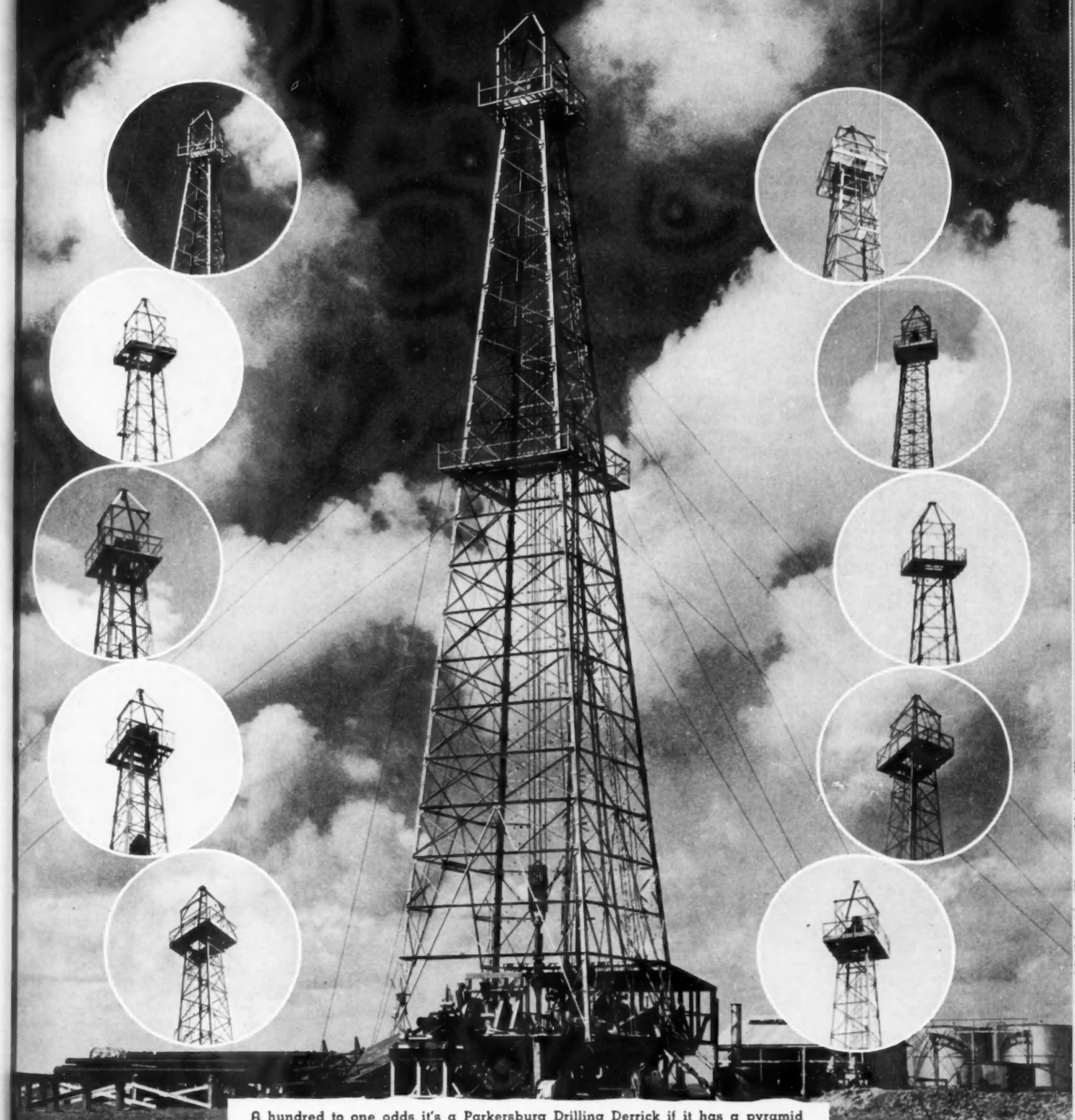
The upper section is made to be readily detachable from the lower section whenever the unit is to be moved distances greater than the average short field moves, or where its over-all height would not clear overhead road obstructions. The vertical corner posts of the upper section are made up of 3½-inch drill pipe. An 8-inch pointed extension on the bottom of each of these legs stabs into the open upper end of the 4-inch corner posts of the lower section. Lifting eyes on the top of each corner of the upper section make it relatively easy to lift it off the lower one, with the aid of the construction crew crane.

A 6-inch sprinkler header extends along the top center part of the upper section. One-inch sprinkler nozzles extend outward at right angles from either side of the header pipe, which in turn is connected to the 6-inch discharge line extending up the outside from the centrifugal pump mounted on the base. Water from these nozzles is sprayed downward over the pipe coils below, the draft set up by the large fan still further creating a cooling action.

The tower is ruggedly constructed to withstand rough conditions encountered in oil field hauling, as well as fan or engine vibrations while in use at the well. The vertical and side bracing is made up of 3-inch and 4-inch angle stock, while the skid base is braced laterally by 4-inch drill pipe. Metal louvres on the back end of the tower break down the force of, and distribute, the exhausted air which is forced through the cooler by the fan at the other end. The two sides of the tower are covered with No. 6 brown duck material. The 6-inch

THE "PYRAMIDS"

Symbols of Enduring Strength and Quality in Drilling Derricks



A hundred to one odds it's a Parkersburg Drilling Derrick if it has a pyramid gin pole. The exception is the owner of another make who has demanded the addition of this patented, exclusive Parkersburg derrick feature. You can identify the "Pyramid" almost as far away as you can see the derrick. And you can be sure, from the experiences of thousands of men who know derricks, that the Parkersburg Pyramid Gin Pole is the "ear-mark" not only of enduring strength and quality in drilling derricks, but of speed and convenience in rigging up and dismantling. Conservatively, it ranks as one of the major contributions to oil well drilling.

THE PARKERSBURG RIG & REEL COMPANY

PARKERSBURG, W. VA.

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THE PARKERSBURG RIG AND REEL CO

mud line headers leading in and out of the coil system have flange ends for quickly connecting and disconnecting the unit from the mud circulating system.

A float valve connected to a fresh-water line piped up to the cooling tower automatically maintains a constant water level in the tank. An apron and screen prevents sticks, leaves or other foreign material from entering the pump suction and possibly clogging the overhead sprinkler system.

The unit is designed for a working pressure of 2000 pounds per square inch. The mud pressure loss sustained in traveling through the coil system is less than 50 pounds per square inch.

The mud-cooling tower is capable of removing approximately 2,000,000 Btu. per hour. At any particular well depth this figure may vary 100,000 to 150,000 Btu. either way, depending upon the type and temperature of the outside weather at the time it is operating. As may be seen by the accompanying chart showing depth-temperature curves of two wells, normal mud temperatures ranging from 135° to 143° F., depending upon the actual depth in each case, have been lowered to and maintained at an average of 112 degrees.

The water pump, at 1200 revolutions per minute, circulates 600 gallons of water per minute under a 125-pound head. The temperature of the circulating water averages 95 degrees. The speed of the 4-foot, 8-blade adjustable pitch propeller fan is 1000 revolutions per minute, and at that speed, discharges 55,000 cubic feet of air per minute through the length of the tower.

The present mud cooler was put into service early this year. It would ordinarily take a longer period of field use and experimentation in order to completely determine the worth and general efficiency of such a unit. Sufficient data have been gathered thus far, however, to indicate that several important and worthwhile results are being achieved.

An important factor resulting from the lowering of mud temperatures is that of reducing the filter loss. An example may be cited wherein a sample of mud was obtained from a certain well while it was drilling at 7800 feet. Filter pressure tests were then made at temperatures of 105 and 140 degrees, corresponding to the approximate normal flow-line temperatures with and without a cooler. Results were as follows:

Water Loss From 500 cc Sample		
Time	**105° F.**	**140° F.**
5 min.	3.0 cc	4.5 cc
10	4.7	6.1
15	5.2	7.1
30	7.5	10.1
60	10.3	14.1
Cake Thickness	3/32"	4/32"

Approximately 27 percent reduction in filter loss, based on the above 1-hour test, is therefore possible by cooling the mud from 140 to 105 degrees. A thinner sheath also was noted.

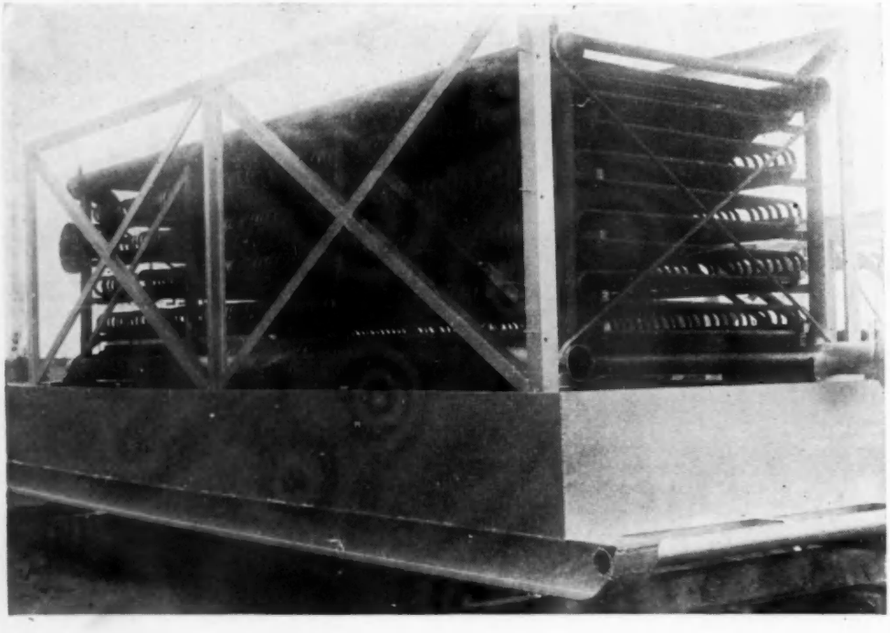
A later field test was made which further substantiated this percentage figure. On two similar wells with like conditions at approximately 8000 feet, the fluid loss in the suction pit was measured for a ½-hour period by shutting off water and chemical in the ditch at each well. With a flow-line temperature of 138° in Well A, the fluid loss in ½ hour was 2-2/3 barrels. With a flow-line temperature of 110 degrees in Well B, the fluid loss in ½-hour was only two barrels. This represents a saving of approximately 25 percent in the fluid loss caused by the higher mud temperatures encountered at depth.

The operation of the mud pumps also has been measurably improved. The temperatures have been lowered to points which correspond to the specifications recommended by the manufacturers of the rubber sleeves, which ordinarily is less than 120 degrees. As a result, pump strokes are smoother, and a much higher pumping efficiency is being obtained.

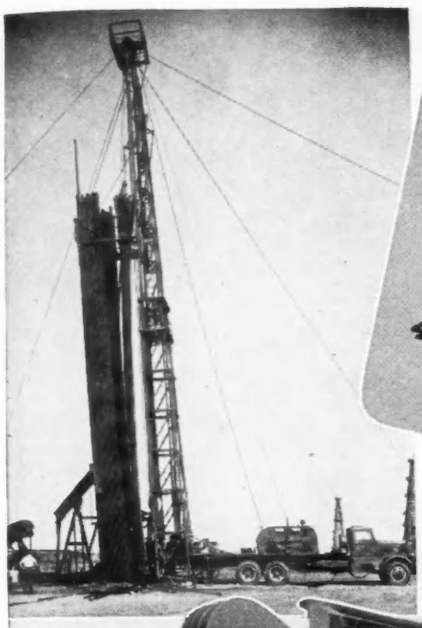
The lowering of mud temperatures directly affects the problem of properly controlling the viscosity of the mud by means of chemicals. It was found that through the use of the cooler, such chemical treatments were rendered much more effective.

Through a possible combination of the beneficial effects upon the above factors, drilling problems have been reduced somewhat, particularly at certain depths in the San Joaquin Valley area where considerable difficulty previously had been experienced in heaving-shale intervals.

Inclined sluice boxes, or other types of open mud coolers have been used for achieving some degree of cooling of the mud in the deeper wells of this area. The portability, efficiency, and convenience of the present cooler, however, are factors that help to offset the somewhat higher initial cost of building such a unit.



View of lower section of the cooling tower during construction. Mud is circulated through a series of ¾-inch extra-heavy seamless tubes over which cool water is sprayed from an overhead sprinkling system.



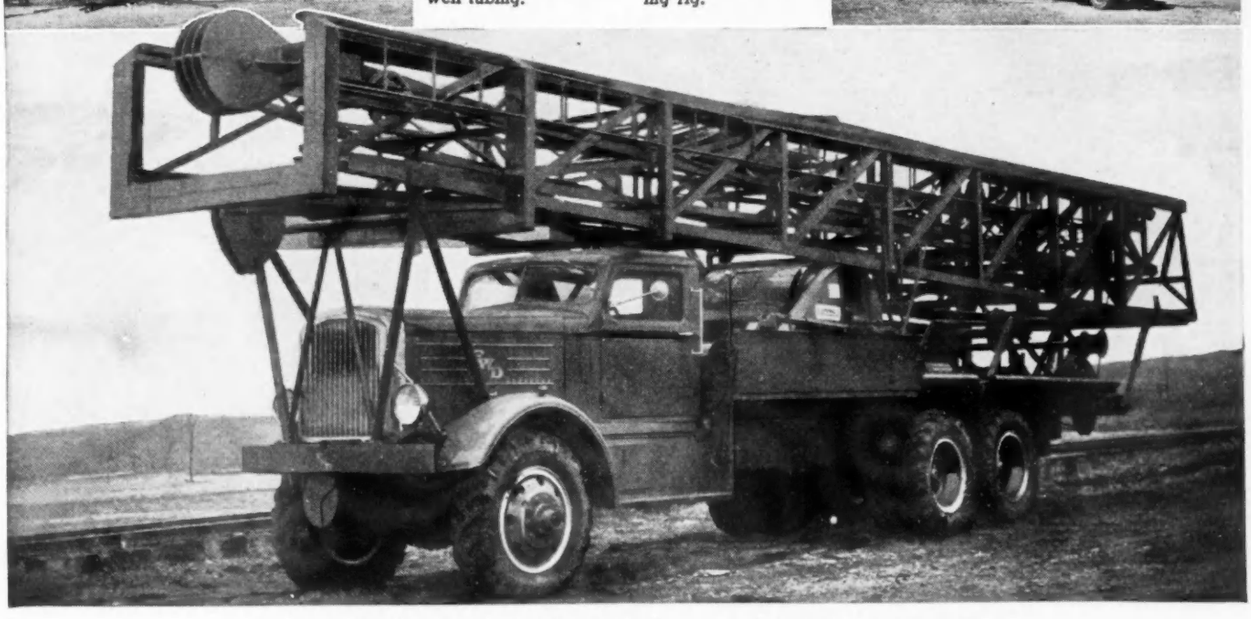
ESSENTIAL TO THE SUCCESSFUL DEVELOPMENT OF PORTABLE UNITS FOR OIL WELL SERVICING AND DRILLING . . .

FWD

4 AND 6 WHEEL DRIVE TRUCKS

FWD six-wheel-drive truck on the job equipped with Frank's servicing rig, pulling well tubing.

FWD six-wheel-drive truck equipped with Frank's portable drilling rig.



FWD six-wheel-drive trucks with Frank's telescopic derrick servicing unit in over-the-road position. In transit the complete unit meets legal requirements of most states.

THE substantial savings achieved by portable drilling and well-servicing equipment has set a definite trend toward this type of equipment in oil field operations. FWD four and six-wheel-drive trucks played a vital role in this development through their outstanding dependability — their extraordinary capacity to get through to location with heavy equipment, despite the treacherous mud and mire of off-the-highway oil-field travel.

Large fleets of FWD's have been operating in the oil fields of the world for years — they are fast becoming the accepted trucks wherever oil is being produced. Available in a complete line of four and six-wheel-drive trucks, gasoline or diesel powered, for every servicing, drilling, or hauling requirement. Write for literature.

THE FOUR WHEEL DRIVE AUTO CO., Clintonville, Wis.
***Canadian Factory,* KITCHENER, ONTARIO**

FWD POWER PROPORTIONING DIFFERENTIAL
In the FWD six-wheel-drive truck the engine's power is distributed to each axle in direct proportion to its loaded weight — 1/5 of the power to the front axle and 4/5 of the power to the rear bogie — accomplished by a free running torque proportioning center differential, an exclusive FWD feature assuring full-powered traction on all six wheels.

FWD

4 AND 6 WHEEL DRIVE TRUCKS

Design of Casing Strings

By EMORY N. KEMLER
Associate Professor of Mechanical Engineering, Purdue University

Theory of Casing Collapse

PART 2

WHEN a tube or string of casing is subjected to external pressures it will, up to a certain pressure, contract uniformly as the pressure is increased, the same as any elastic body under stable equilibrium conditions. For higher pressures, the tube becomes unstable and failure results because of buckling of the tube. The method of failure is similar to that of a slender rod subjected to an axial load. If a slender rod is loaded axially it will, up to a certain load, deflect, proportionally to the load. When the load reaches a certain critical value, the rod will buckle and failure will occur without warning. The rigorous mathematical treatment of failure of a tube subject to external pressure for all conditions is quite difficult and involved.

The equation for determining the load at which failure due to instability will result is often called the elastic curve. This curve corresponds to Euler's curve for the buckling of columns and is a function of loads and casing dimensions. Since it is based on the theory that failure is due to instability, it does not contain a stress factor and for the conditions to which it applies is the same regardless of the type or quality for a material with a given modulus of elasticity. Several different forms of this elastic curve for the collapse of thin-walled pipes have been obtained, depending on the assumptions made. They agree, however, within a few percent. The one given in the A.P.I. informational circular on setting depths of casing (Bulletin 5-c-2) for steels used for casing is,

$$P = \frac{62.6 \times 10^6}{D/t\ (D/t - 1)^2}$$

where P = pressure at which collapse will occur in lb./in.²
D = pipe diameter in inches
t = pipe wall thickness in inches.

The plot of this curve is shown in Figure 3. This curve serves as a guide as to the limiting values of load that can be carried by casing. For any D/t value as plotted along the abscissa, the maximum load which any material can carry will be less than the value shown by the curve. When wells were shallow and the pressures to which casing was subjected were low, the elastic curve gave values for the materials used which were within the required limits of accuracy. When smaller D/t values were used, the deviation from the elastic curve became considerable and some correction of the values were necessary.

The work of Jasper and Sullivan gave a basis for the development of a rational and practical extension of the collapse curves to cover the normal range of steels used for casing. They found that for the materials covered, that to the left of the elastic curve that the pressure at which collapse would occur was dependent on the yield strength of the steel. Figure 4 shows several such collapse curves. It can be seen that up to a certain D/t value, the collapse pressure is not dependent on the yield strength of the steel. At higher D/t values, the collapse pressure is a function of the yield strength. The elastic curve equation can also be expressed by

$$P = \frac{2E}{(1-\sigma^2)} \cdot \frac{1}{D/t\ (D/t-1)^2}$$

where σ = Poisson's ratio
E = modulus of elasticity.

As has been pointed out by Sturm, Clindenst, and Holmquist and Nadai, the equation for the elastic curve can be used for calculation of the load or pressure at which failure will occur for the region to the left of the curve, provided a different value of E is used. The value used for the plastic region is designated by E_r and is called the reduced modulus of elasticity. It is given by the equation

$$E_r = \frac{4\ E\ E_1}{(\sqrt{E} + \sqrt{E_1})^2}$$

where E is Young's modulus of elasticity,
E_1 is slope of stress strain curve at given load,
E_r is the reduced modulus of elasticity.

Since E_1 or the slope of the stress strain curve at a given load is dependent on the properties of the steel, it can be seen that the shape of the elastic curve will be dependent on the stress-strain curve for the steel. The work of Holmquist and Nadai gives the results of the analysis for various types of stress-strain curves. In a final analysis no general types of curves can be drawn since the collapse pressure will be dependent on the shape of the stress-strain curve. The values shown in Figures 4 and 5 are for steels used in the manufacturing of casing. Materials with a stress-strain curve differing considerably from them may show slightly varying values.

Figure 6 shows for comparison purposes, the elastic curve for aluminum and for steel. This shows the manner in which the modulus of elasticity affects the load at failure. In the absence of experimental data, curves similar to these shown in Figure 5 could be calculated by the method given by Holmquist and Nadai. While calculated values would be reasonably close, experimental data are required to check not only the theory but more important, to check the degree of manufacturing control.

Theory of Tensile Failures

The strength of threaded casing joints in tension has not been investigated as thoroughly as the strength in collapse. The drilling of deeper wells and the use of high-strength materials has required a lowering of the factor of safety in tension. This requirement has made pull-out strength assume a more important role and it will undoubtedly receive some attention in the future. Because failure occurs by the joint pulling out of the coupling as well as by actual tensile failure, the problem has not been subjected to mathematical analysis. The more recent work by Crawford on electrically-welded casing has given some very useful information on joint strength. He found

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ON DECEMBER 11, 1911, the Lebanon Steel Foundry was organized by the two men who still head it—W. H. Worrilow, President and T. S. Quinn, Treasurer. Lebanon's thirty-year study of foundry practice (domestic and European) . . . Lebanon's thirty-year development of alloys for wider and wider ranges of casting application . . . today make Lebanon the choice of those who insist on fine craftsmanship and expert design.

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LEBANON *Stainless and Special Alloy* **STEEL CASTINGS** CIRCLE L

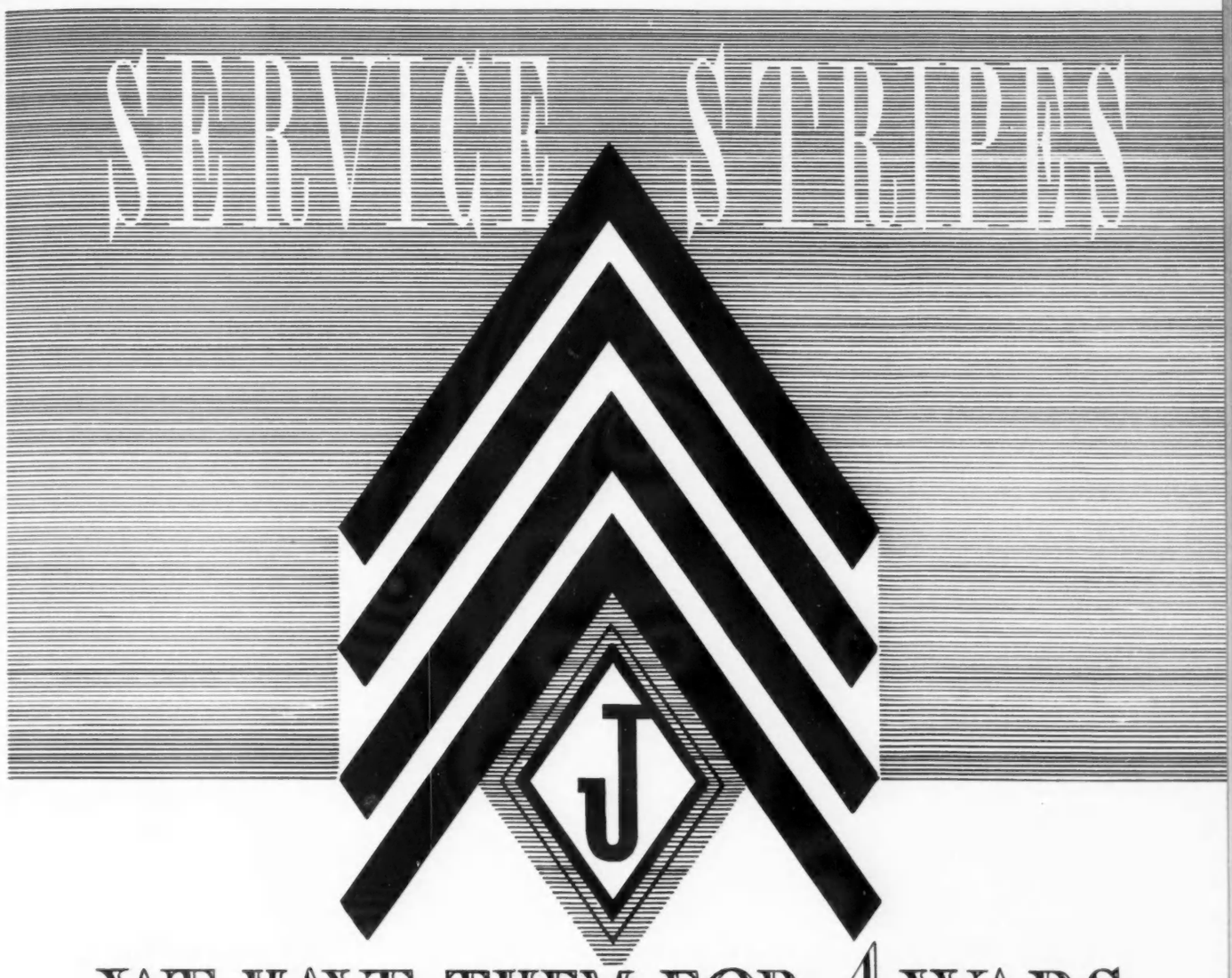
the joint strength in tension to be, within experimental limits, a function of the yield strength of the material in tension and to be generally independent of the ultimate strength of the material. The curves of load vs. wall thickness were essentially straight lines which intersected the zero load line at a wall thickness of from 0.070 to 0.080 inches. This range represents the wall thickness used by the threads, or the thickness at which there would be no metal left under the roots of the threads.

Other than these general observations, the problem must be handled by studying experimental

TABLE 2
Minimum Performance Properties of Casing

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
NOMINAL DIMENSIONS				GRADE F-25			GRADE H-40			GRADE J-55				GRADE N-80		
Outside Dia. (Inches)	Weight Per Foot (Threads and (Coupling) (Pounds)	Wall Thickness (Inches)	$\frac{D}{t}$ Ratio	Collapse Pressure (PSI)	Joint Strength (1,000 Lb.)	Bursting Yield Strength (PSI)	Collapse Pressure (PSI)	Joint Strength (1,000 Lb.)	Bursting Yield Strength (PSI)	Collapse Pressure (PSI)	Short Coupling Strength (1,000 Lb.)	Long Coupling Strength (1,000 Lb.)	Bursting Yield Strength (PSI)	Collapse Pressure (PSI)	Long Coupling Strength (1,000 Lb.)	Bursting Yield Strength (PSI)
4¼	16.00	0.334	14.22	3,530	126	3,080	.....	.....	.....	6,340	226	269	6,760	8,330	312	9,840
4¼	18.00	0.375	12.67	....	...	....	.....	.....	.....	7,090	...	302	7,600	9,270	351	11,050
4¼*	16.25	0.334	14.22	3,530	193	3,080	.....	.....	.....	6,340	335	398	6,760	8,330	462	9,840
5	13.00	0.253	19.76	2,250	100	2,210	.....	.....	.....	3,930	178	209	4,870	5,150	244	7,090
5	15.00	0.296	16.89	2,810	116	2,590	.....	.....	.....	4,980	210	247	5,700	6,510	288	8,290
5	18.00	0.362	13.81	3,670	140	3,170	.....	.....	.....	6,550	258	305	6,970	8,570	354	10,130
5	21.00	0.423	11.82	4,460	162	3,700	.....	.....	.....	7,550	301	356	8,150	9,870	415	11,850
5½	14.00	0.244	22.54	1,850	106	1,940	2,440	139	3,110	3,170	186	...	4,270	4,130	...	6,210
5½	15.00	0.263	20.91	2,070	113	2,090	2,770	151	3,340	3,590	201	236	4,600	4,700	274	6,690
5½	17.00	0.304	18.09	2,560	130	2,420	3,470	176	3,870	4,500	234	275	5,320	5,890	320	7,740
5½	20.00	0.361	15.24	3,230	153	2,870	.....	.....	.....	5,770	280	329	6,320	7,580	382	9,190
5½	23.00	0.415	13.25	....	...	....	.....	.....	.....	6,800	...	378	7,260	8,900	440	10,560
5¾	14.00	0.230	25.00	1,560	103	1,750	.....	.....	.....	2,640	180	...	3,850	3,260	...	5,600
5¾	17.00	0.280	20.54	2,120	124	2,130	.....	.....	.....	3,700	223	252	4,690	4,840	294	6,820
5¾	19.50	0.330	17.42	2,690	145	2,510	.....	.....	.....	4,760	265	302	5,520	6,230	351	8,030
5¾*	20.00	0.330	17.42	2,690	234	2,510	.....	.....	.....	4,760	390	456	5,520	6,230	530	8,030
5¾	22.50	0.380	15.13	3,260	167	2,890	.....	.....	.....	5,820	307	358	6,360	7,650	417	9,250
5¾*	23.00	0.380	15.13	3,260	266	2,890	.....	.....	.....	5,820	430	502	6,360	7,650	586	9,250
6	16.00	0.250	24.00	1,670	116	1,820	.....	.....	.....	2,840	205	...	4,010	3,700	...	5,830
6	18.00	0.288	20.83	2,080	133	2,100	.....	.....	.....	3,620	239	278	4,620	4,730	323	6,720
6	20.00	0.324	18.52	2,480	149	2,360	.....	.....	.....	4,350	270	315	5,200	5,690	366	7,560
6	23.00	0.380	15.79	....	...	....	.....	.....	.....	5,480	...	371	6,100	7,170	532	8,860
6⅝	20.00	0.288	23.00	1,790	148	1,900	.....	.....	.....	3,060	259	299	4,180	4,010	348	6,080
6⅝	22.00	0.318	20.83	....	...	....	.....	.....	.....	3,620	288	333	4,620	4,730	387	6,720
6⅝	24.00	0.352	18.82	2,420	179	2,330	.....	.....	.....	4,250	320	370	5,110	5,550	430	7,440
6⅝	26.00	0.385	17.21	2,740	194	2,550	.....	.....	.....	4,850	351	405	5,590	6,350	471	8,140
6⅝	28.00	0.417	15.89	3,050	210	2,760	.....	.....	.....	5,440	381	439	6,060	7,110	511	8,810
6⅝	29.00	0.432	15.34	....	...	....	.....	.....	.....	5,720	...	455	6,270	7,470	530	9,130
7	20.00	0.272	25.74	1,490	146	1,700	1,920	191	2,720	2,500	254	...	3,740	2,960	...	5,440
7	22.00	0.301	23.26	1,760	161	1,880	2,310	214	3,010	3,010	284	326	4,140	3,930	379	6,020
7	24.00	0.332	21.08	2,050	177	2,070	2,730	237	3,320	3,550	315	362	4,570	4,640	420	6,640
7	26.00	0.362	19.34	2,330	191	2,270	3,130	259	3,620	4,070	345	395	4,980	5,320	460	7,240
7	28.00	0.393	17.81	2,610	207	2,460	.....	.....	.....	4,610	375	430	5,400	6,030	501	7,860
7	30.00	0.423	16.55	2,890	222	2,640	.....	.....	.....	5,130	405	464	5,820	6,710	539	8,460
7	32.00	0.454	15.42	....	...	....	.....	.....	.....	5,670	...	497	6,240	7,420	580	9,080
7⅝	26.40	0.328	23.25	1,760	188	1,880	.....	.....	.....	3,010	333	378	4,140	3,930	439	6,020
7⅝	29.70	0.375	20.33	2,160	213	2,150	.....	.....	.....	3,760	382	434	4,730	4,910	505	6,890
7⅝	33.70	0.430	17.73	2,630	242	2,470	.....	.....	.....	4,640	440	499	5,430	6,070	581	7,890
8⅛	28.00	0.320	25.39	1,520	189	1,720	.....	.....	.....	2,570	340	371	3,790	3,110	431	5,510
8⅛	32.00	0.370	21.96	1,920	217	1,990	.....	.....	.....	3,320	396	434	4,380	4,340	505	6,380
8⅛	35.50	0.420	19.35	2,320	245	2,260	.....	.....	.....	4,070	450	596	4,980	5,320	577	7,240
8⅛	39.50	0.470	17.29	2,730	273	2,530	.....	.....	.....	4,820	506	568	5,570	6,300	650	8,100
8⅛*	40.00	0.470	17.29	2,730	470	2,530	.....	.....	.....	4,820	661	...	5,570	6,300	...	8,100
8⅛	42.00	0.500	16.25	....	...	....	.....	.....	.....	5,270	...	595	5,920	6,890	691	8,620
8⅝	28.00	0.304	28.37	1,250	189	1,540	1,580	252	2,470	2,060	336	...	3,400	.....	.....	.....
8⅝	32.00	0.352	24.50	1,610	217	1,790	2,110	295	2,850	2,740	393	437	3,930	3,470	509	5,710
8⅝	36.00	0.400	21.56	1,970	245	2,030	.....	.....	.....	3,420	448	499	4,460	4,470	581	6,490
8⅝	38.00	0.425	20.29	2,170	260	2,150	.....	.....	.....	3,770	477	531	4,740	4,930	618	6,900
8⅝	43.00	0.487	17.71	2,630	295	2,470	.....	.....	.....	4,650	548	610	5,430	6,080	710	7,900
8⅝	44.00	0.500	17.25	....	...	....	.....	.....	.....	4,830	...	626	5,580	6,320	729	8,110
9	34.00	0.355	25.35	1,520	225	1,720	.....	.....	.....	2,570	408	451	3,800	3,120	525	5,520
9	38.00	0.402	22.39	1,870	253	1,950	.....	.....	.....	3,210	464	514	4,300	4,190	598	6,250
9	40.00	0.425	21.18	2,030	266	2,070	.....	.....	.....	3,520	492	544	4,540	4,610	633	6,610
9	45.00	0.484	18.60	2,460	302	2,350	.....	.....	.....	4,320	562	621	5,170	5,650	722	7,530
9	55.00	0.594	15.15	....	...	....	.....	.....	.....	5,810	...	761	6,350	7,680	886	9,240
9⅝	36.00	0.352	27.34	1,340	230	1,600	1,710	318	2,560	2,220	422	462	3,520	2,480	537	5,120
9⅝	40.00	0.395	24.37	1,630	258	1,790	.....	.....	.....	2,770	477	521	3,950	3,530	606	5,740
9⅝	43.50	0.435	22.13	1,900	282	1,980	.....	.....	.....	3,270	527	575	4,350	4,280	670	6,330
9⅝	47.00	0.472	20.39	....	...	....	.....	.....	.....	3,740	...	626	4,720	4,900	727	6,860
9⅝	53.50	0.545	17.66	....	...	....	.....	.....	.....	4,670	...	722	5,450	6,110	841	7,930
10¾	40.50	0.350	30.71	1,080	248	1,430	1,340	338	2,280	1,730	450	478	3,130	1,730	557	4,560
10¾	45.50	0.400	26.88	1,380	282	1,630	.....	.....	.....	2,300	518	550	3,580	2,610	641	5,210
10¾	51.00	0.450	23.89	1,680	315	1,830	.....	.....	.....	2,870	585	622	4,030	3,750	724	5,860
10¾	55.50	0.495	21.72	1,960	345	2,010	.....	.....	.....	3,380	644	686	4,430	4,420	798	6,450
11¾	47.00	0.375	31.33	1,040	273	1,400	.....	.....	.....	1,630	507	526	3,070	1,630	613	4,460
11¾	54.00	0.435	27.01	1,370	315	1,620	.....	.....	.....	2,270	593	614	3,560	2,570	715	5,180
11¾	60.00	0.489	24.03	1,670	353	1,820	.....	.....	.....	2,840	668	694	4,010	3,710	807	5,830
13⅜	48.00	0.330	40.53	560	254	1,080	.....	.....	.....	740	469	...	2,370	740	540	3,460
13⅜	54.50	0.380	35.20	810	290	1,240	.....	.....	.....	1,140	545	...	2,730	1,140	627	3,970
13⅜	61.00	0.430	31.10	1,050	327	1,410	.....	.....	.....	1,670	613	614	3,090	1,670	714	4,500
13⅜	68.00	0.480	27.86	1,290	364	1,570	.....	.....	.....	2,140	695	688	3,460	2,330	800	5,020
13⅜	72.00	0.514	26.02	....	...	....	.....	.....	.....	2,450	...	738	3,700	2,880	858	5,380
13⅜	83.00	0.600	22.29	....	...	....	.....	.....	.....	3,230	...	863	4,310	4,230	1,000	6,280

* External upset.



WE HAVE THEM FOR 4 WARS

Jarecki had been established nine years when, on April 22, 1861, the bombardment of Fort Sumter opened the Civil War.

When Admiral Dewey won his historic victory at Manila Bay — on May 1, 1898 — Jarecki had completed 46 years of service.

When the United States formally entered the first World War — on April 6, 1917 — Jarecki was observing its 65th anniversary.

And now, embarking on its ninetieth year, Jarecki has enlisted in still another war — the struggle to defend ourselves against any event uality that may threaten our liberties and institutions.

In this war, as in previous wars, Jarecki pledges itself to a two-phase policy: (1) to place national interests above all other considerations; and (2) to do our best, within the limitations imposed upon us by a grave emergency, to serve our oil-industry friends.

Jarecki
MANUFACTURING COMPANY
"Since 1852"

General Office: St. Louis, Mo. Home Office and Factory: Erie, Pa., U. S. A. District Offices: Pittsburgh, Pa.; Tulsa and Bartlesville, Okla.; Dallas and Houston, Texas; Mt. Pleasant, Mich.; Centralia, Ill.; Owensboro, Ky.

BRANCH STORES AT ALL IMPORTANT PLACES IN THE OIL COUNTRY

data. The number of tests available for a study of tensile strength of casing joints is limited. With a more thorough study of the problem, more specific ideas will undoubtedly occur as to the various factors influencing joint strength.

Theory of Bursting Failures

The introduction of squeeze-cementing practices has made bursting strength of more interest. The method of calculating bursting strength of casing has been to use Barlow's formula which is,

$$P = \frac{2\,S\,t}{D}$$

where P = bursting pressure in lb./in.^{2}
S = tensile strength of steel in lb./in.^{2}
t = wall thickness in inches
D = outside diameter in inches.

This formula is based on the basis that failure will occur when the ultimate strength of the material has been exceeded. Actually failure may occur anywhere between the yield strength value and the ultimate strength. A conservative method of calculating the bursting strength is to substitute the minimum yield strength in this formula and to use the minimum wall thickness which would be encountered. For casing, the mini-

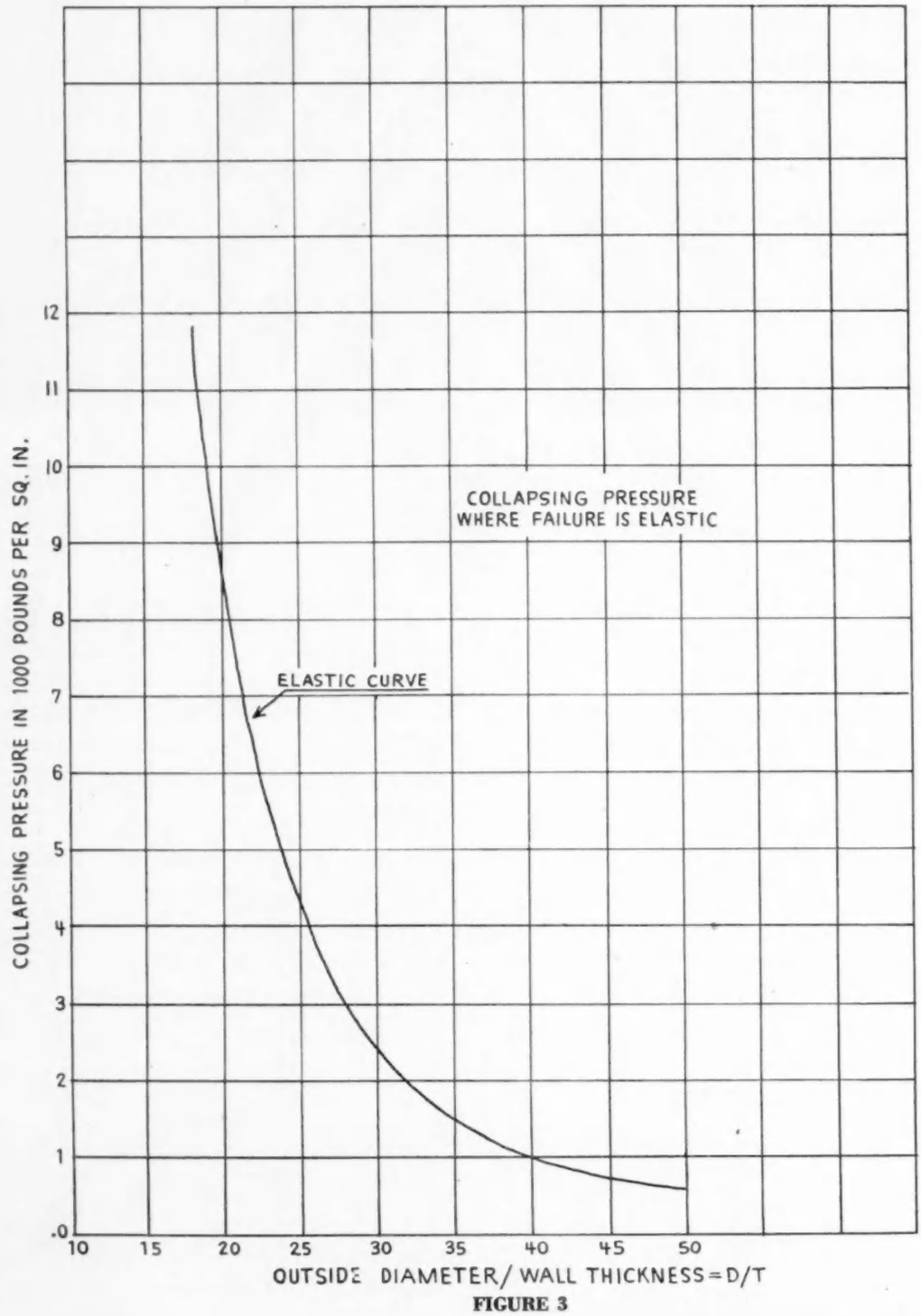


FIGURE 3

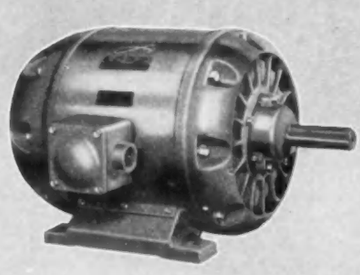
Compare Louis Allis Explosion-Proof motors point by point with any others on the market—

And we are sure you will agree that they are the finest explosion-proof motors ever built —bar none!

One of the *twenty* carefully engineered features of these explosion-proof motors is shown above—

This is the inside of the endbell — note the extra long closely machined rabbet fits—and the strongly reinforced cast iron construction.

These endbells are scientifically reinforced inside and out to withstand any likely internal explosion, with a safety factor of FIVE!



The very first fan-cooled explosion-proof motor was originated, developed, patented and pioneered by The Louis Allis Co.

As the originator — and pioneer — The Louis Allis Co. has more actual years of manufacturing and operating experience with this type motor than any other manufacturer —

The present Louis Allis Explosion-Proof motor now makes available a new high in electric motor efficiency, dependability, convenience, long life —and SAFETY.

We earnestly solicit your inquiry — write for copy new twenty page descriptive bulletin No. 508E.

THE LOUIS ALLIS CO., MILWAUKEE, WIS.

mum wall thickness should be within 12½ percent of the nominal. This would mean that the minimum bursting pressure would be given by

$$P = \frac{2 \times .875\, S_y\, t}{D}$$

where S_y = the minimum yield strength in tension
t = nominal wall thickness.

There is little test data available on the failure of casing by bursting and until some data are obtained some arbitrary conservative formula as given above must be used.

Actual Minimum Collapse Joint Strength Bursting Values

As a result of reviewing all the applicable data available on casing, Westcott, Dunlop and Kemler in a paper on "Setting Depth for Casing" recommended temporary minimum properties for casing. As a result of this study and of the action of the A.P.I. Committee on Standardization of "Oil Country Tubular Goods," minimum values for setting depths were set up. The

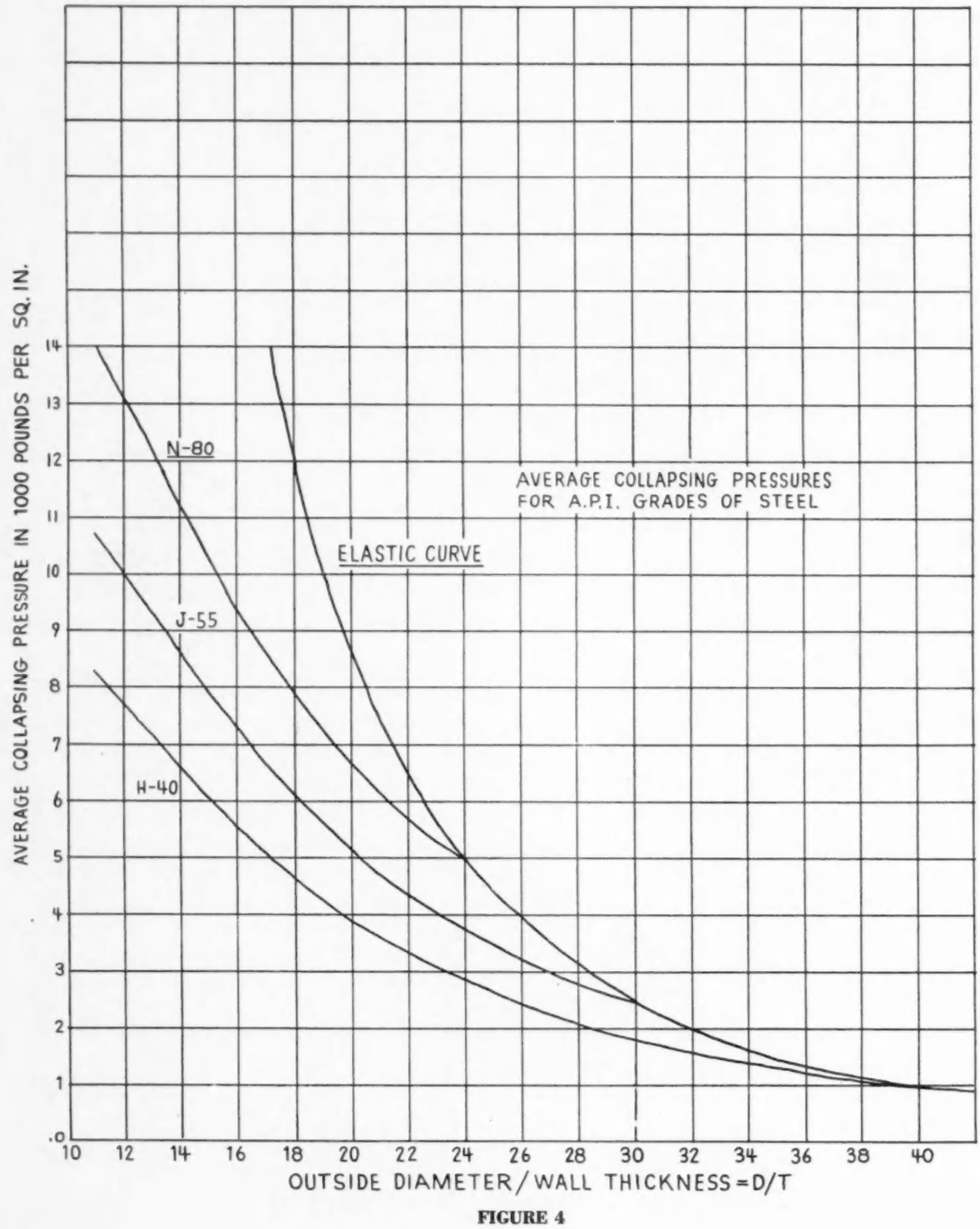
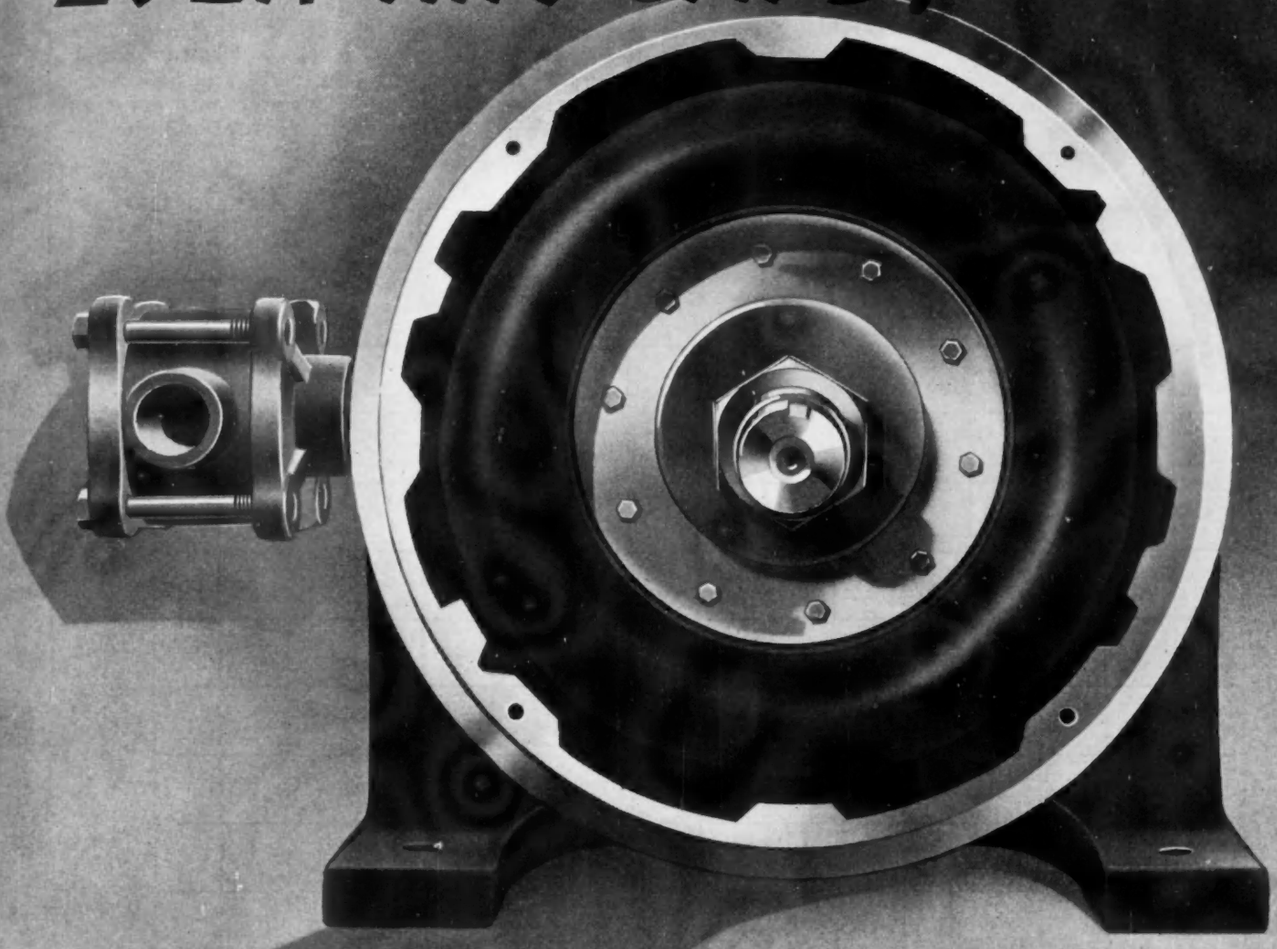


FIGURE 4

EVEN AIR GAPS!



Accurately ground stator bore of Louis Allis induction type motors helps to insure even air gaps and precision electrical balance.

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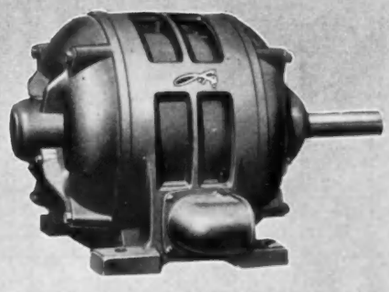

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minimum collapse strength was set at 75 percent of the average collapse pressure as given in present A.P.I. Bulletin 5-c-2. Minimum joint strength values were set at 80 percent of the average ultimate strength values as now given in Bulletin 5-c-2. The minimum bursting strength was made 87½ percent of the values now given in Bulletin 5-c-2. These values are tentative and are necessarily subjected to revision as more data and information becomes available. While it would be desirable to have complete data available for setting minimum values which would represent the product available at any time, the operator must have some basis for designing casing strings, and the above information represents the best criterion available. The table attached lists the values as included above. These values are minimum values below which the strength would not normally fall and can be used as a basis for setting up the minimum factor of safety. Factor of safety will be discussed later.

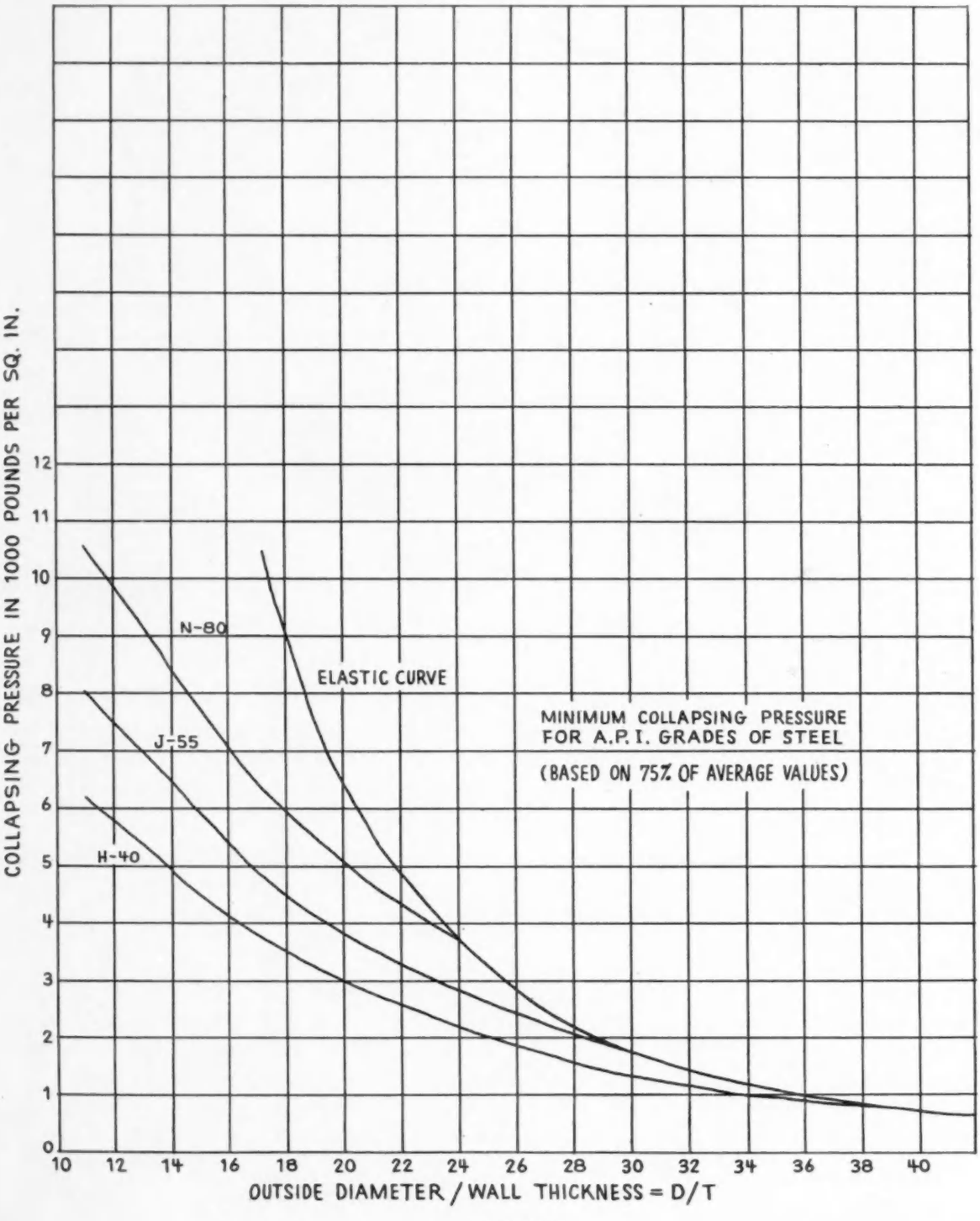


FIGURE 5

Completions Under Month Ago But Above Year Ago

Drilling was maintained on a relatively large scale in November, despite a slight contra-seasonal decrease in daily average completions; and continuance of field work at an active pace is indicated for December, as there were more rigs in operation on December 1 than on November 1.

Completions in the United States averaged 97.6 daily in November, having been not greatly under the year's highest levels that were reached in September and October. Revised figures show that completions averaged 101.3 daily in October and 102.2 daily in September. The November activity was very closely comparable with that of July and August.

November brought curtailment of drilling in Oklahoma, Kansas, North Texas, West Texas, New Mexico, North Louisiana, and Mississippi; but most other districts were about unchanged or showed small increases.

The 97.6 completions per day for November of this year were about 11 percent above the 87.6 daily in November of last year.

For the first 11 months of 1941, United States completions, on a daily average basis, have been 6 percent in excess of those in the corresponding months of 1940, as indicated in an accompanying table.

On December 1, 1941, there were 4746 rigs in operation in the United States, including those actually drilling, rigging up, or temporarily shut down. That number was greater than the total of 4672 reported for November 1, 1941, and it was 18 percent above the 4023 listed on December 1 last year.

STATE OR DISTRICT	TOTAL RIGS IN OPERATION (Drilling, Rigs Up, Shut Down)				DETAILS OF DECEMBER 1, 1941 FIELD ACTIVITY					
					Rigs in Operation			Prelim. Activity		
	Year Ago Dec. 1, 1940	Month Ago Nov. 1, 1941	Now Dec. 1, 1941	Percent Change From Year Ago	Drilling	Rigs Up	Shut Down	Derricks	Locations	Total Operations
Alabama	5	4	6	+ 20.0	3	1	2	....	1	7
Arkansas	24	40	26	+ 8.3	23	1	2	6	3	35
California	268	302	294	+ 9.7	192	70	32	....	100	394
Colorado	27	26	26	— 3.7	12	1	13	....	1	27
Florida	4	2	2	— 50.0	....	....	2	....	....	2
Georgia	4	1	1	— 75.0	....	....	1	....	....	1
Illinois	333	407	402	+ 20.7	307	57	38	....	58	460
Indiana	88	58	67	— 23.9	62	2	3	....	18	85
Iowa	2	....	....	....	....	....	....	....	....	....
Kansas	242	229	208	— 14.0	188	16	4	21	41	270
Kentucky	54	40	37	— 31.5	30	2	5	2	4	43
Louisiana	227	217	221	— 2.6	187	21	13	42	76	339
North Louisiana	106	67	80	— 24.5	64	11	5	30	10	120
South Louisiana	121	150	141	+ 16.5	123	10	8	12	66	219
Michigan	148	183	194	+ 31.1	133	31	30	28	76	298
Mississippi	31	36	34	+ 9.7	24	4	6	3	2	39
Missouri	16	6	5	— 68.8	....	....	5	....	1	6
Montana	72	84	84	+ 16.7	40	8	36	....	2	86
Nebraska	35	24	22	— 37.1	13	4	5	4	2	28
New Mexico	102	117	106	+ 3.9	71	4	31	....	15	121
New York	48	125	148	+208.3	108	15	25	10	27	185
North Dakota	....	2	2	....	....	....	2	....	....	2
Ohio	252	288	319	+ 26.6	205	66	48	19	45	383
Oklahoma	340	360	352	+ 3.5	295	21	36	42	69	463
Oregon	1	2	....	....	....	....	....	....	....	....
Pennsylvania	378	410	430	+ 13.8	312	41	77	29	75	534
South Dakota	1	1	....	....	....	....	....	....	....	....
Tennessee	11	5	5	— 54.5	4	....	1	....	....	5
Texas	1,010	1,365	1,370	+ 35.6	1,101	89	180	63	739	2,172
East Texas Field	20	21	8	— 60.0	4	....	4	2	....	10
East Texas Border Co.'s	12	15	14	+ 16.6	9	2	3	1	2	17
Rest of East Texas	42	67	73	+ 73.8	55	9	9	8	5	86
North Texas	194	184	173	— 10.8	127	8	38	5	211	389
South Texas	222	333	335	+ 50.9	279	20	36	19	188	542
Corpus Christi Area	120	184	187	+ 55.8	163	13	11	9	89	285
Laredo Area	59	91	88	+ 49.2	75	4	9	5	48	141
San Antonio Area	43	58	60	+ 39.5	41	3	16	5	51	116
Texas Gulf Coast	102	135	141	+ 38.2	116	11	14	7	80	228
Texas Panhandle	78	148	156	+100.0	123	21	12	11	31	198
West Texas	243	360	380	+ 56.4	325	13	42	9	201	590
West Central Texas	97	102	90	— 7.2	63	5	22	1	21	112
Utah	8	5	4	—100.0	2	....	2	....	....	4
Washington	....	1	....	....	....	....	....	....	....	....
West Virginia	217	282	329	+ 51.6	238	34	57	22	55	406
Wyoming	75	50	52	— 30.7	29	5	18	....	5	57
Total United States	4,023	4,672	4,746	+ 18.0	3,579	493	674	291	1,415	6,452

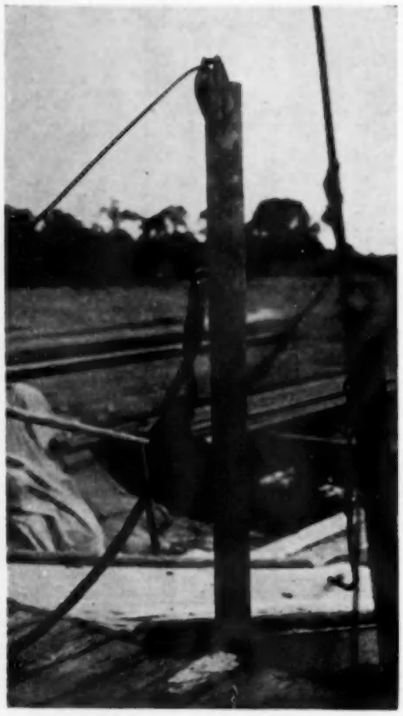
STATE OR DISTRICT	MONTHLY COMPLETIONS								CUMULATIVE COMPLETIONS—First 11 Months							
	Total			Details for November, 1941					Total			Details for 11 Months of 1941				
	Year Ago (Nov., 1940)[2]	Month Ago (Oct., 1941)[3]	Latest Data (Nov., 1941)[1]	New Wells Drilled for Oil and Gas			Miscellaneous	Initial Oil Production	1940[4]	1941[5]	Percent Change in Weekly Average	New Wells Drilled for Oil and Gas			Miscellaneous	Initial Oil Production
				Oil	Gas	Dry						Oil	Gas	Dry		
Alabama	1	2	1	....	....	1	....	....	9	5	— 43.3	....	....	5	....	....
Arkansas	9	32	20	16	1	3	....	4,910	166	175	+ 7.7	102	3	68	2	21,959
California[6]	70	88	97	79	2	16	....	36,696	964	1,025	+ 8.5	830	19	176	.....	580,123
Colorado	1	1	3	1	1	1	....	716	8	18	+129.8	7	4	6	1	1,496
Florida	....	1	....	....	....	....	....	....	1	1	....	....	....	1	....	....
Georgia	....	....	....	....	....	....	....	....	....	1	....	....	....	1	....	....
Illinois	291	369	375	280	2	80	13	92,486	3,629	3,594	+ 1.2	2,540	12	770	272	726,212
Indiana	71	39	52	20	7	23	2	1,414	474	492	+ 6.0	236	46	184	26	30,797
Iowa	1	....	1	....	....	1	....	....	1	6	+513.5	....	....	6	....	....
Kansas	162	196	158	98	4	46	10	105,791	1,827	2,027	+ 13.3	1,319	62	535	111	1,742,775
Kentucky	40	21	37	16	2	18	1	746	338	304	— 8.2	115	6	166	17	5,800
Louisiana	151	167	122	69	11	42	....	13,813	1,553	1,403	— 7.7	919	85	396	3	177,763
North Louisiana	65	121	50	25	8	17	....	2,873	595	621	+ 6.6	387	68	164	2	41,482
South Louisiana	86	46	72	44	3	25	....	10,940	958	782	— 16.6	532	17	232	1	136,281
Michigan	103	80	85	57	10	18	....	49,202	1,116	778	— 28.8	352	64	360	2	257,949
Mississippi	20	35	16	12	....	4	....	6,433	177	191	+ 10.2	147	4	39	1	88,267
Missouri	10	3	2	....	....	2	....	....	84	64	— 22.2	6	9	49	.....	18
Montana	11	36	27	14	6	7	....	1,857	165	207	+ 28.1	120	49	38	.....	18,667
Nebraska	18	10	9	5	....	2	2	1,954	39	85	+122.7	35	....	38	12	15,680
New Mexico	40	39	30	25	....	4	1	5,493	586	347	— 39.5	261	14	69	3	59,481
New York	62	89	129	64	....	....	65	491	896	947	+ 7.9	585	2	1	359	4,245
Ohio	140	165	157	41	77	35	4	1,348	985	1,606	+ 66.5	373	710	401	122	9,638
Oklahoma	183	188	129	54	10	48	17	21,410	1,935	1,955	+ 3.2	1,047	140	551	217	355,304
Pennsylvania[7]	287	340	354	158	38	7	151	257	3,435	3,675	+ 9.2	1,616	358	111	1,590	2,199
South Dakota	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....
Tennessee	3	....	....	....	....	....	....	....	26	16	— 37.1	....	3	13	....	....
Texas	705	847	845	601	31	201	12	290,615	8,981	9,423	+ 7.2	6,849	243	2,217	114	3,817,648
East Texas Field	34	31	31	30	....	1	....	37,526	282	499	+ 80.7	478	....	16	5	859,301
East Texas Border	4	3	5	1	....	4	....	78	25	31	+ 26.5	6	11	14	.....	484
Rest of East Texas	23	55	50	37	5	8	....	12,620	236	501	+116.8	327	34	136	4	115,681
North Texas	194	208	181	113	2	59	7	37,497	1,981	2,232	+ 15.1	1,418	12	760	42	467,772
South Texas	171	189	199	134	10	54	1	52,726	2,356	2,182	— 5.4	1,428	84	648	22	525,959
Corpus Christi	84	98	117	85	6	25	1	36,802	1,161	1,182	+ 3.9	886	41	244	11	412,834
Laredo	65	61	61	35	4	22	....	13,132	962	741	— 21.3	402	41	289	9	97,429
San Antonio	22	30	21	14	....	7	....	2,792	233	259	+ 13.5	140	2	118	2	15,696
Texas Gulf Coast	89	50	58	38	2	18	....	6,674	1,106	683	— 36.9	499	25	159	.....	117,344
Texas Panhandle	40	61	63	56	6	1	....	11,859	578	623	+ 10.1	564	36	22	1	121,825
West Texas	103	207	186	166	....	17	3	126,194	1,765	2,093	+ 21.1	1,885	8	162	38	1,573,653
West Central Texas	47	43	72	26	6	39	1	5,441	652	579	— 9.3	244	33	300	2	35,629
Utah	....	1	....	....	....	....	....	....	3	3	....	....	1	2	....	....
West Virginia	69	74	74	11	45	12	6	269	554	671	+ 23.7	93	444	107	27	1,099
Wyoming	5	12	9	7	....	1	1	1,019	127	123	— 1.1	85	4	17	17	40,518
Total United States	2,453	2,835	2,732	1,628	247	572	285	636,920	28,080	29,142	+ 6.0	17,637	2,282	6,327	2,896	7,957,638

[1] Wells completed in 4 weeks, or 28 days, ended November 24, 1941. [2] Wells completed in 4 weeks, or 28 days, ended November 25, 1940. [3] Wells completed in 4 weeks, or 28 days, ended October 27, 1941. [4] Wells completed in 48 weeks, or 336 days, ended November 25, 1940. [5] Wells completed in 47 weeks, or 329 days, ended November 24, 1941. [6] California figures from the American Petroleum Institute except for November, 1941. [7] Bradford, Pennsylvania, figures from The Producers Monthly, except for November, 1941.

Practical Operating Hints for

1. SAFETY

Hidden Tong Spring Clears Floor Space



Pulley and vertical guide pipe carry line well above working head room

TO PERMANENTLY attach the tong-return spring off the floor where it will not hinder movement of crew members or create a possible danger in case of breakage, one operator uses a joint of 3-inch pipe placed on one side of the floor with the helical spring pinned securely inside. The pipe is about 20 feet long, or of sufficient length to permit driving lower end into the ground for substantial support, with the top extending approximately five feet above the floor.

A coiled spring of proper tension to pull on the tongs for returning into position to obtain another "bite" on the pipe is located in the lower section of the pipe, and is pinned in place by means of a bolt through the walls. A steel cable is attached to top of the spring, extending out of the container pipe and fastened to the handle of the tong. Top of the container is equipped with a pulley welded in position, and through it the cable is strung, operating on its sheave to reduce friction and wear.

Height of the pipe eliminates tong line as obstruction on the floor, while in event the spring breaks, it is held within its containing pipe by the pulley which partially seals off top of the pipe.

2. STEAM LINES

Unitized Feed Lines Simplify Rigging Up

WATER and steam lines from boiler to rig may be welded together in such way as to allow transporting them as individual sections connected by means of

Welded stubs on steam line support water lines in unionized pipe sections

unions to save rigging-up time. The 2-inch water lines and larger steam lines form sections approximately 20 feet long, and are welded parallel, spaced about 3 inches apart, joined by short pieces of 2-inch pipe welded perpendicularly to them.

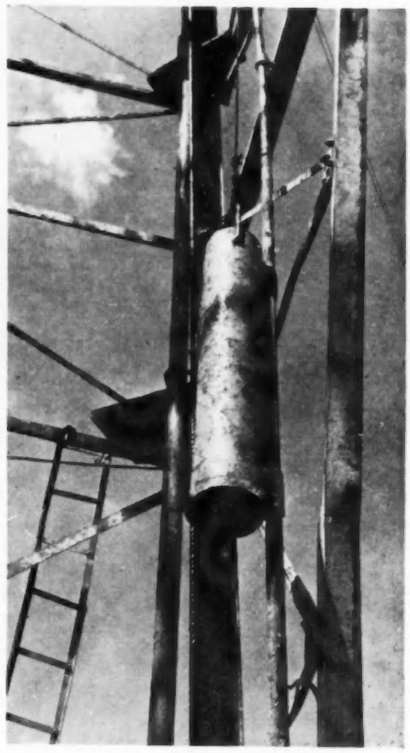
When these lines are being built, especially constructed steel horses are placed near their ends, and the next section drawn near and in position to be joined. Each pipe is equipped with an individual union, these eliminating the necessity of rotating the pipe.

The three unions at ends of each section are easily fastened to make a tight connection, whereas otherwise, the individual pipes would have to be laid separately and screwed together. Rigidity of the hook-up facilitates moving to another location, and necessitates transportation of fewer pieces of equipment. In addition, the pipes are held at the proper distance apart, and the regularity of their spacing adds a neat appearance to the rig installation.

3. COUNTERWEIGHT

Guide Curbs Travel of Tong Counterbalance

DANGER to rig and crew caused by counterbalance swinging in high winds or by breaking of its supporting cable may be reduced by a guide which determines the path of its travel. Such a guide may consist of a joint or more of 2-inch pipe clamped vertically to girders in the derrick structure in the vicinity



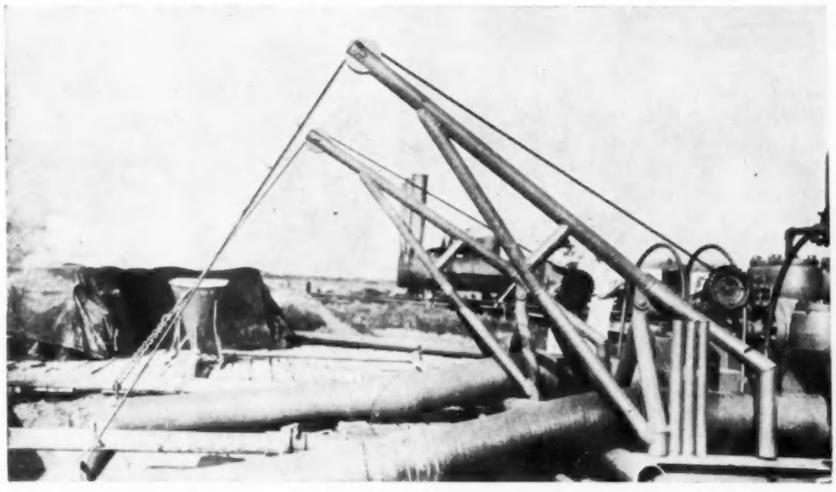
Loops welded to unit case engage vertical rails to insure proper clearance

of the counterbalance and in the path which it customarily travels.

To the counterbalance are welded at top and bottom, two short pieces of 3-inch pipe vertically aligned to permit the guide to be threaded. The counterbalance, filled with water or other ballast in proper amount to provide necessary weight, is attached to its supporting cable, strung over a block higher in the derrick, and to the other end of which are attached the tongs. With the guide erected in its proper position, and the 2-inch pipe threaded through the guide eyes, the counterbalance is held against the guide, but is free to slide vertically as height of the tongs is altered.

4. MUD SUCTION CONTROL

Fabricated Trusses Support Suction Lifts And Mount Hand-powered Ratchet Hoists



Built-up by the welder from short pipe sections, this neat-appearing and very compact stiff-leg crane carries hose from edge of pump skid.

HAND hoists save time and provide more efficient manipulation of mud suctions on many rigs. One such hoist is erected for operation in connection with a hand crank, both mounted on the same skids with the mud pumps. The crane is constructed of 4-inch drill pipe with ample bracing of 3-inch pipe, welded throughout and fastened at bases to the pump skids. At the top of the boom is welded a sheave, with free rotation provided by a pin welded through hub of the wheel.

A steel cable is run through the sheave, with the free end attached to an eye in the top of the suction pipe, either by means of a hook, by doubling the cable and clamping, or by using a chain and hook. The other end of the steel cable is fastened to a hand-operated worm gear reel at lower end of the boom.

This type gear provides self-locking action, and requires no external device to prevent movement of reel, at the same time facilitating adjustments of the suction pipes, one person accomplishing the operation with ease.

5. FOUNDATIONS

Prefabricated Horses Carry Rig Equipment

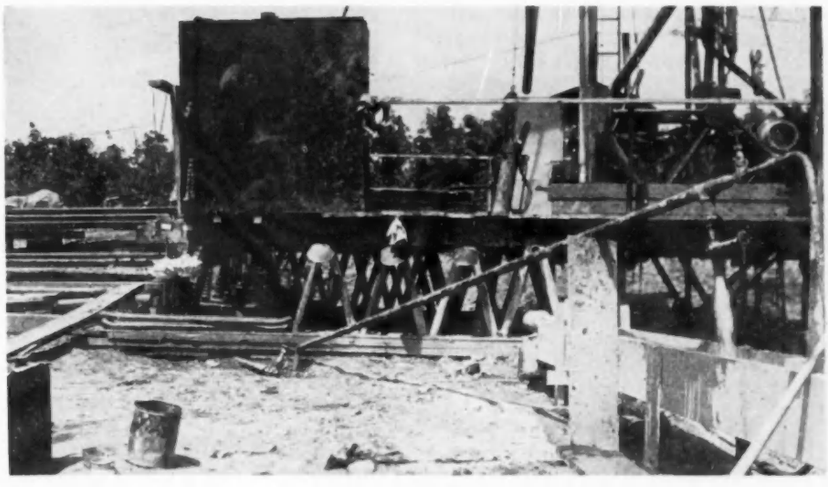
MAINTAINING all the working space around a rig at the same level as the derrick floor reduces the possibility of accident, and enables operations to be speeded to limits imposed by the equipment.

On one rig operating in the East Cromwell pool, Oklahoma, extension of the working floor from that immediately surrounding the rotary table is secured by carrying heavy beams across the front of the rig, and supporting the overhang on a series of prefabricated iron horses or frames.

The supports are welded up from 3-inch pipe, with one joint furnishing the top and with paired legs at intervals sufficient to carry the superimposed load without buckling of the bearing member. Levelling of the floor is reduced to the spotting of bearing points, blocking or metal, under each of the feet of the frame, instead of having to provide uniform bearing and clearance for a beam.

The open ends of the 3-inch top members serve as convenient storage points for such tools as wrenches, shovels and other gear which may be required quickly and which are concentrated at handy, central points.

Nesting of the horses for rig shift enables the supports to be readily transferred to new site.



Ranked transversely across timber mat, these built-up derrick foundation extension supports permit proper levelling of rig engine unit.

Practical Operating Hints for

1. SAFETY

Elevated Platform on Vent Forestalls Hurt

Maintenance of vent lines and escape trap screens is easy from this stand

A TANK battery vent line which is equipped with a back-pressure valve or a safety device for control of escaping gas is provided with a ladder and platform to facilitate repairing the valves and to safeguard the employees while accomplishing the job. The 4-inch vent line, passing over the stock tanks, is extended horizontally to a safe distance from the tanks for expelling the gases into the air, and is elevated 18 feet above the ground from tank to its safety-valve equipped terminus.

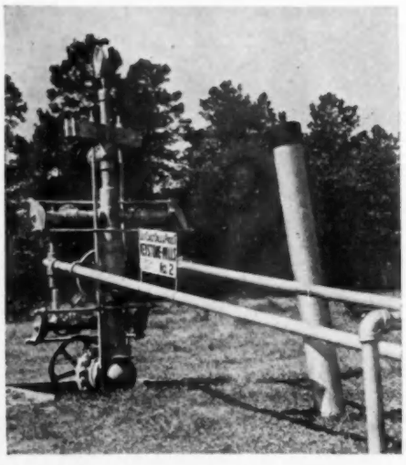
The line is welded to a 20-foot joint of 4-inch pipe which supports the exhaust end on the vertical pipe steps, being spaced in convenient locations for climbing. The steps are short pieces of sucker rod welded perpendicular to the upright, with the ends bent upward to furnish additional safety.

A few feet from the top, a 3 x 1½-foot tee of 2-inch pipe is welded to the upright and provides base for the platform, which is made of ½-inch steel plate cut semicircular and having an 18-inch radius. A rail of sucker rod is welded to top of the platform, and is also semicircular and supported about three feet above the platform by rods of the proper length.

Safeguard against fire is provided by a 15-foot chain attached at the top to the valve and reaching almost to the ground. By pulling the chain, the valve is closed in event the escaping gases accidentally ignite, forestalling spread of fire to the storage tanks. To prevent the upright pipe from filling with condensate, a short 1-inch nipple with valve is welded near the bottom of the pipe for draining off fluids.

2. WORK-OVERS

Permanent Rathole Cuts Rigging Up



Pipe left when moving derrick is handy for set-up when plug-back is sought

IN AREAS where formation characteristics or other conditions necessitate frequently working over of the wells, one operator has adopted the practice of leaving the rathole pipes standing when moving the rig to another location, to simplify and expedite expected workover jobs in the future. The encased rathole, still protected by its original pipe, stands near the Christmas trees, in convenient location for subsequent operations. All such pipes are painted neatly to match in appearance the contingent producing equipment and to be inconspicuous and sightly.

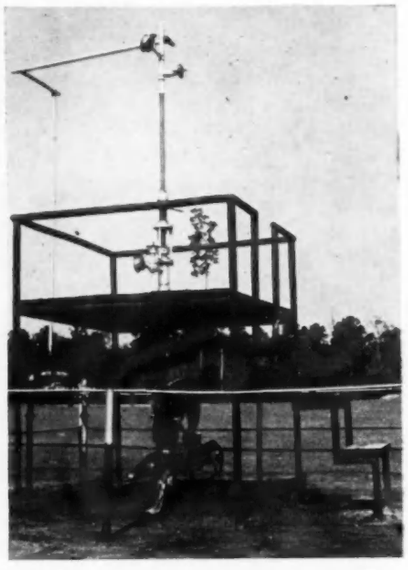
When necessary to work over the wells, after the rig is moved into position, time is saved by having the rathole already provided, eliminating a portion of the workover expense.

3. AIR LIFTING

Working Floor Above Well Aids Servicing

WELLS equipped with unusually tall Christmas trees or flow apparatus which elevates gauges and valves, complicating their manipulation from the ground, are sometimes provided with elevated platforms to facilitate such operations. One producing company, employing equipment which includes a macaroni string inside the 2½-inch tubing in the well, provides a sturdy platform to simplify pulling the small tubing when servicing, affording the men ample space for their work and substantial flooring to support their weight and the tools used on the job.

Framework is made of 2½-inch tubing, with all connections welded.



Unitized structure supports platform and protects well and Christmas tree

THE PRODUCTION MAN . . .

Four corner uprights driven firmly into the ground comprise the principal support. At a height of six feet, horizontal pipes are welded to support the flooring, and three feet higher, guard rails are provided. Across the horizontal pipes, several 2 x 12-inch boards are laid, with space in the center for portions of the Christmas tree which extend higher.

A stairway frame welded in the center of one side of the structure is made of the same material, and at the top of this is an opening in the guard rail to allow free passage to the platform. The stairs are about three feet wide, and across the intervening space, 2 x 12-inch treads are bolted in position. The planking is removable when necessary to work on lower section of Christmas tree, and horizontal pipe on the stairway frame is easily removed to allow running line through this section. Tie-downs are provided for pulling machines during such operations.

4. ENGINE MAINTENANCE

Temporary Covers Block Moisture from Units During Standby Time and Prolong Service

Inverted grease buckets or quart oil cans set over exhaust pipe stubs prevent rain from causing corrosion.

RAIN water entering the open end of vertical exhaust pipes of internal combustion engines is the frequent cause of corroded and pitted engine parts, the accumulated moisture tending to drain back through the exhaust system to the valves and valve stems, depending upon which valves happen to remain open after the power unit is stopped.

One user of multi-cylinder units in field operations simply has an empty grease bucket turned over the exposed ends of exhaust pipes when the engines are to remain idle for more than a brief shutdown period.

Since the buckets used are light, even if an engine be started without the cover being removed, the first full exhaust is usually sufficient to blow the cover clear, and leave the pipe open.

Quart oil cans also serve as temporary seals, but should be painted to halt rusting at top.

5. PIPE CARE

Sealed Pipe Joints Cut Repair Lost Time

ALONG isolated points in Pico Canyon, north of Los Angeles, Southern Counties Gas Company places emergency repair pipe line joints which are wrapped and protected from damage by adverse weather conditions. A wooden rack is set on the ground beside the pipe line and designed to hold two repair sections. The sections themselves are ready to lay in the ground, and particular attention is paid to insure a clean interior. Galvanized iron caps are made for each end of the repair sections, which slip snugly over the openings so that birds and rodents cannot contaminate the inside of the pipe by building nests.

If the pipe be sprayed with rust inhibitor before placing on the storage rack, adequate protection is afforded by the caps. Should it be required that the pipe be kept clear of oil or solid material which might contaminate pipe walls throughput, the caps may be sealed with a light bead, or the junction of cap and pipe covered with a wrapping of wide electrician's tape, this latter being coated with aluminum paint to extend useful life.

Interior corrosion of emergency repair or replacement joints is effectively prevented by close-fitting galvanized caps and elevated mounts.

THE practical operating hints for the drilling rig and production man, appearing in these features each week, are secured from oil fields everywhere and offer suggestions that will help to improve field efficiency and safety. The items give an excellent picture of the remarkable ingenuity being exercised by the operating divisions of the industry. Contributions to these features will be paid for at the rate of $5 for each illustrated item accepted. Address contributions to "The Editor, THE OIL WEEKLY, Houston."

OIL MEN WILL UNDERSTAND

Why MORSE ROLLER CHAINS LAST LONGER

Oil men searching for sturdy, long-lived roller chain realize the importance of the exclusive Morse design which puts a "force feed" lubrication system in every link, feeding oil to the heart of the chain, the pin and bushing areas.

In a Morse roller chain, oil gets in, wear stays out. Life-preserving lubrication makes Morse roller chain last longer, perform smoothly through the most exacting service.

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SILENT CHAINS ROLLER CHAINS FLEXIBLE COUPLINGS

MORSE *positive* DRIVES

MORSE CHAIN COMPANY ITHACA N. Y., DIVISION BORG-WARNER CORP.

HIGHLIGHTS IN THE WEEK'S NEWS

Control

Interstate Compact Called To Meet December 19-20

The next quarterly meeting of the Interstate Oil Compact Commission has been called to meet in the Biltmore Hotel, Oklahoma City, December 19 and 20, by Leon C. Phillips, Governor of Oklahoma and Chairman of the Compact. This commission is composed of representatives from Arkansas, Colorado, Illinois, Kansas, Louisiana, Michigan, New Mexico, New York, Oklahoma, Pennsylvania and Texas. Indications are that member states will all be officially represented.

Since this will be the annual organization meeting, devoted entirely to business, there will be no formal program or open sessions. Invitations will be sent only to the commission, its advisers and counsellers, members of its committees, and state regulatory officials.

The meeting will be devoted to the election of officers, appointment of standing committees, and to outlining and planning the activities of the commission for the coming year.

The commission, at this meeting, proposes to work out the details of its plan to enlarge its activities and functions to better effectuate its program of conservation, Phillips said.

Texas Hearing December 15 At Austin Is Important

The Texas Railroad Commission has scheduled a hearing for December 15 at Austin, which may prove to be of unusual significance because of recent developments at Washington. Because of higher demand for certain grades, especially high-octane oils, Texas probably will be called upon to produce more oil of this class.

Commissioners Jerry Sadler and Olin Culberson have indicated they will decline to revise allowables for particular fields, unless there is a definite indication from Washington that extra oil of a particular grade is needed. Developments during the past few months indicate that these two commissioners have determined on the policy which will result in elimination of shutdown days, except in cases where shutdowns may be necessary for the prevention of waste.

The only area to which this standard might apply is the East Texas field, which, if allowed to produce daily the full scheduled allowable, would probably suffer an abnormal pressure decline. However, for the remainder of the fields, it appears that these two commissioners, at least, do not want to make any adjustments until all wells produce every day in the month.

While members of the commission were silent on the subject, it appears that Dr. F. V. L. Patten, chief supervisor of oil and gas for the commission, was in Washington during the last week of November, conferring with federal officials. While there, it is believed Patten outlined to the coordinator the reserves which are available and the pipeline facilities for delivering those reserves.

Last week Sadler and Culberson went to Washington for an unannounced purpose. Because their jurisdiction is limited to oil and transportation, and the Interstate Commerce Commission fairly well cares for the latter, oil seemed to be about the only subject that could have caused the trip. Commissioner E. O. Thompson had been there about a week before to confer on the oil situation. Thus, each member of the commission and the chief of its executive staff will be fully cognizant of conditions in the industry as viewed by Washington when the hearing is called.

Operators who anticipate increases have requested special hearings at which they have outlined conditions in individual fields.

A hearing on Seminole was held November 29, on East Flour Bluff on December 5, on Ganado, Ganado Deep and Mauritz on December 6.

Scheduled hearings include:

December 8 — to amend operating rules for the Sun field, Starr County, and Lovell Lake, Jefferson County; to determine whether the Fagan-McFadden area in Victoria and Refugio counties is one oil field producing from a common reservoir.

December 9 — to amend operating rules for Ellenberger production at KMA, Wichita County, and a hearing which was postponed from November 28 to fix operating rules for Powell, Navarro County.

December 12—to consider revision of the method of taking potentials in the Foster pool, Ector County.

News Index

General:

Associations	52
Control	51
Prices	56
Washington	11
Markets-Statistics	55
Men in News	71

U. S. Field Operations:

Arkansas	62
California	63
Completions	64
East Texas	60
Illinois	57
Kansas	57
Louisiana Coast	61
Michigan	62
Nebraska	63
New Mexico	63
North Louisiana	62
North Texas	58
Oklahoma	57
Southwest Texas	61
Texas Gulf Coast	61
West Texas	57
Wildcat Development	68

Meeting Set to Discuss Salt Water Disposal Order

East Texas oil operators have been invited to attend a meeting to be held in Dallas December 10, to discuss methods for operating under the new salt water disposal order issued by the Texas Railroad Commission. The new order provides that a premium allowable be given those wells which join some system for returning salt water to the Woodbine sand. The purpose of the program is to encourage this practice as a means of sustaining pressures.

Engineers and attorneys of some of the companies have held several exploratory conferences during the past week to determine how a cooperative plan could be worked out, according to C. G. Condra, Fort Worth attorney, who acted as chairman of this committee. He said that plans for a corporation to operate disposal systems have been discussed.

The Dallas meeting is to be held as a forum where all operators in the field will be given a full opportunity to present for discussion any plans which they may be prepared to offer, Condra said. No definite program was completed in Houston. The committee, however, expects to present the final plan to the Railroad Commission for its approval before any definite action is taken.

Well Status Report Called For in East Texas Field

The Texas Railroad Commission has issued an order requiring that well status reports be filed for each producing well in the East Texas field, such reports to be filed by December 15. The order has unusual significance at this time, as these reports will probably form the basis of many allowances made for salt water production under the commission's new salt water disposal order.

The latter order provides a maximum premium of eight barrels per well for those wells producing salt water, where arrangements are made to inject this salt water into the reservoir.

Commission Wins in Allowable Formula Suit

The Beaumont State Court of Civil Appeals has handed down a decision reversing and rendering for the Texas Railroad Commission the decision of the trial court in the Conoco-Driscoll case. This new decision sustains the contentions of the commission that it may consider the market demand for all fields in fixing allowables, instead of considering only the demand for oil from a particular field.

Continental Oil Company brought suit against the commission order instituted under its formula last March. The company proved that there was a market for about twice as much oil as the commission allowed, and won in the trial court. Whether it will appeal to the Supreme Court could not be determined.

Associations

Thompson Will Address East Texas A.P.I. Group

Ernest O. Thompson, chairman of the Texas Railroad Commission, will address the East Texas Chapter of the American Petroleum Institute at the final meeting of the year at 8 p.m. December 9, in the high school auditorium at Kilgore.

It is understood Commissioner Thompson will discuss current trends in the oil industry, including recent developments in Washington.

For entertainment, a sound color film, "Hawaii," will be shown. A dinner in honor of guests and speakers will be held in the Kilgore Hotel prior to the meeting.

District A.P.I. Meeting Scheduled at Tulsa

The regular spring meeting of the Mid-Continent District, American Petroleum Institute, Division of Production, will be held in the Mayo Hotel, Tulsa, March 26-27, 1942. George Berlin, chairman of the division, announced the meeting and dates.

H. M. Stalcup, Skelly Oil Company, Tulsa, is chairman of general committee on arrangements. Committee members, all of Tulsa, are: Roscoe Ayers, Bethlehem Supply Company; F. E. Bernsen, Lucey Products Corporation; P. H. Bohart, Gulf Oil Corporation; W. M. Bovaird, Bovaird Supply Company; D. E. Buchanan, Hanlon-Buchanan, Inc.; C. W. Flint, Tulsa Rig & Reel Company; M. T. Gilbert, Mid-States Oil Corporation; Dana Kelsey, Sinclair-Prairie Oil & Gas Company; A. J. Kerr, Pittsburgh Equitable Meter Company; H. W. Ladd (Ex-officio), Stanolind Oil & Gas Company; R. W. McDowell, Mid-Continent Petroleum Corporation; D. G. Mann, The National Supply Company; C. V. Millikan, Amerada Petroleum Corporation; R. B. Roark, Shell Oil Company; E. E. Robbins, Oil Well Supply Company; C. S. Sanders, Stanolind Oil & Gas Company; O. C. Schorp, The Carter Oil Company; J. L. Shakeley, Frick-Reid Supply Company; D. R. Snow, Barnsdall Oil Company; Carl Swanson, Continental Supply Company; Dee Sykes, Baroid Sales Division, National Lead Company; W. K. Warren, Warren Petroleum Company; Al West, Continental Oil Company; W. K. Whiteford, British American Oil Producing Company; C. O. Willson, The Oil & Gas Journal.

The program committee is composed of C. D. Miller, chairman, Barnsdall Oil Company, Tulsa; E. O. Bennett, Continental Oil Company, Ponca City; H. F. Beardmore, Amerada Petroleum Corporation, Tulsa; Ralph Clark, Gulf Oil Corporation, Tulsa; Pat McDonald, British American Oil Producing Company, Oklahoma City; J. S. Montgomery, Phillips Petroleum Company, Bartlesville; R. P. Moscrip, Shell Oil Company, Inc., Wichita; Chas. Galloup, Texoma Natural Gas Company, Amarillo.

The publicity committee is composed of C. O. Willson, chairman, The Oil & Gas Journal, Tulsa; C. V. Barrows, Daily Oklahoman, Oklahoma City; N. D. Bartlett, Amarillo Globe News, Amarillo; Paul S. Hedrick, Tulsa Daily World, Tulsa; Harry E. Hoare, The Pampa News, Pampa; Joseph A. Kornfeld, Wichita Beacon, Wichita; Andy Rowley, Tulsa Tribune, Tulsa; Frank Taylor, The Oil Weekly, Tulsa; W. Townsley, Great Bend Tribune, Great Bend, Kansas.

The meeting room facilities committee includes A. J. Kerr, chairman, Pittsburgh Equitable Meter Company, Tulsa; H. F. Beardmore, Amerada Petroleum Corporation, Tulsa; Jack Powers, Bethlehem Supply Company, Tulsa.

H. W. Ladd, Stanolind Oil & Gas Company, Tulsa, is chairman of the registration committee.

Dee Sykes, Baroid Sales Division, National Lead Company, Tulsa, is chairman of entertainment.

Electric Power Use Gaining In All Branches of Industry

Petroleum Electric Power Association in thirteenth annual conference at Dallas December 4-5, heard that electric power requirements are fast increasing. This applies both to producing and refining. This trend is already established, and gaining momentum with increased defense effort.

H. E. Roberts, vice president of the association, responded to an address of welcome by Walter Moore, vice president of Dallas Power & Light Company. In his talk Moore called attention to the greater understanding between the petroleum industry and the power association. He also suggested that there now exists a greater appreciation of their mutual problems than has prevailed in past years. He called attention to the power demand likely required for the emergency and pointed out that this demand would have to be met with present or not greatly expanded facilities. This, he pointed out, would be a result of priorities limiting to essentials the new equipment that will be available to the power firms. In his reply to the welcome, Roberts reiterated the fundamental object of the organization, to "render greater service to the oil industry through cooperative effort" and held that this remains the main objective of the association.

"Pipe Lines and National Defense," the subject of a talk by A. N. Horne, general manager of Empire Pipe Line Company, was a discussion of this requirement and how it might be influenced by emergency needs. He detailed recent uses of natural gas as a material to be processed into important strategic materials and liquid fuels and pointed out that these must be transported by pipe line.

Tank farms of past years are now a thing of the past—no longer being required as pipe line operations now are from production point to refining point, eliminating the necessity of capacity in overhead storage. In this connection, he suggested that this was very desirable for instead of having reserves above ground, they are now in the reservoir until required, and being there are safe from bombing. True, he admitted, that the pipe line can be bombed, but if so it can quickly be repaired. For these pipe lines, the electric industry might be called upon for power. Discussing the line proposed by the Petroleum Coordinator's office from southwestern producing areas to the east coast, he stated that the design of the line had included 26 pumping stations, all to utilize electricity as power. This would have involved sufficient energy to move some 250,000 to 300,000 barrels daily, or about 4500 horsepower per station. He stated that recently completed lines in the southeast were using electric power, that the United States-Canada line also used electric energy, and that no doubt the line suggested to parallel the Burma road would be electrically energized.

A symposium of discussion detailed variable speed couplings and variable speed pumps. Dave Levy, Magnolia Pipe Line Company, Dallas, called upon E. A. Koenig of that company, R. K. Albert, Louis Allis Company and C. G. Unlab, Electric Machinery Company, for detailed discussion. Koenig outlined the engineering features of a line handling butanes and other light elements. A completely enclosed, automatically controlled system was described, with a special development of a variable capacity pump a key factor in the operation. The system was designed for a maximum working pressure of 1200 pounds with capacity of 4300 barrels daily. All-electric automatic controls and pressure equipment was used with reciprocating, triplex pumps. Albert, taking an electric type of variable-speed drive as his subject, explained its operation and use. In principle it was shown to be a combination of the slip-ring and the eddy-current drive to gain a variable speed control. A governor has been applied which has materially increased the applicability of this instrument to the industry. Unlab detailed a type of magnetic drive and also described the function of the variable-sheave type of transmission. In this piece of equipment, the effective diameter of the sheave is varied, thus obtaining an equivalent speed-power variant. The fluid transmission is another means of gaining this object.

H. C. Gear, Lone Star Gas Company, Dallas, called the convention's attention to the annual $35,000,000 loss to the petroleum industry through corrosion of buried equipment. He tranced the history of protection and described reactions contributing to this difficulty. Since 1934, he said, advance in protection has been rapid, especially so in the use of cathodic protection. For this purpose, he pointed out the desirability of a constant source of power. He emphasized that this work is continuing and that most of it is being carried on by the cathodic section of the association. Typical installations were shown in a movie.

D. R. Knowlton, Phillips Petroleum Company, Bartlesville, talked on "The Future of Oil Production Methods" and described the present position of the industry in relation to electric power used. He pointed out that prevalent use of sucker-rod pumps and suggested that other methds were only now taking hold in the industry. He anticipated increased application of both fluid-actuated bottom-hole pumps and electrically

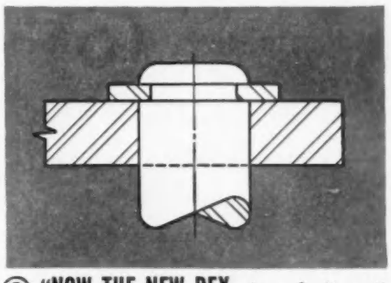
BUT WHY SHOULD I USE A RIVETED OIL WELL CHAIN?

"I know a lot of drillers who have asked me this—knowing that we make both riveted and cottered oil well chains. They all thought there was no such thing as a 100% satisfactory riveted oil well chain. Yet these same drillers, after they've seen our new riveted oil well chains, have become as enthusiastic as we are about them."

THE REX MAN

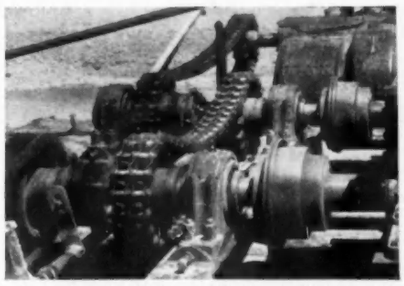
① **"I'LL TELL YOU,"** I said, "why this Rex riveted oil well chain will give you longer service, greater economy, than any cotter-type chain you might be using —or than other riveted type chain, for that matter. Take a look at this . . .

② **"OCCASIONALLY, ON COTTER-TYPE** chains the cotters will work loose and obstructions to the motion of the drive sometimes shear off the cotter. When this occurs, the result is shorter working life and, of course, higher chain cost.



③ **"NOW THE NEW REX** riveted oil well chain is remarkably easy to take apart: its rivet head is so small that when the pin is driven out, the head cannot score the sidebar hole or the inner surface of the bushing. Know what this means?

④ **"IT MEANS THAT WHEN** you take apart a Rex riveted chain, you do not destroy the sidebar as you do when taking down other types of riveted chain. In other words, you save one link—as much as a third of a foot of chain!



⑤ **"TRY THESE RIVETED CHAINS ON** your rigs! You'll get longer service from a chain that's easier to put on, take off, and repair. Yet you'll pay no more than for ordinary oil field chains! What can you lose?"

⑥ **"YOU'VE REALLY GOT SOMETHING!** This answers every complaint I've ever had about riveted chains. Now I can, and will, use them on my rigs . . ." Note: Why don't you investigate these new great riveted chains? Call your Rex supply store!

P.S. *Don't forget Rex roller chains! Available in single or multiple width strands, they're an oil field standby for high-speed, "slim hole" drilling! Rex Roller, Rex Champion, Rex Deepwell, Rex Standard and Rex Universal (in single and double strands) cover all oil well drilling needs. Ask your local supply dealer about them, or write directly for complete information. Address 1639 West Bruce Street, Milwaukee, Wisconsin.*

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driven centrifugal units in the lifting of oil.

Paralleling this advance, he added, is the advance in producing technique, the increased utilization of reservoir energy and better understanding of reservoir sciences. Proration and secondary recovery will add materially to per-acre recoveries even although the great bulk of oil will continue to be produced by some lifting means. Because it is so readily adaptable to automatic control, an increased use of electric power by the oil industry is bound to follow, he said. In this respect, he felt that the industry is still in the frontiers in the use of electric power. Particularly in auxiliary operations was an extended use of electricity in the petroleum industry anticipated.

Robert Haldane, Shell Oil Company, Houston, outlined the refined products that have recently been isolated or manufactured in sufficient quantities to be available in manufacturing. He called attention to the fact that refineries are producing an increasing number of materials and compounds for processing, and that the demand for these materials is steadily increasing. By its nature new refinery methods which result in the production of these materials, requires additional power. Also, as some of the new materials now being processed at the refinery were formerly waste and were used as fuels to power the plant, there is additional economy in the purchase of suitable and reliable outside power. In one refining plant, considering a constant input, an increase of 50 percent in steam power and a 59 percent increase in electric power has been required. Haldane anticipated further increases in refinery requirements of electric power, this increase to parallel roughly the application of advanced techniques in the manufacture of basic materials.

The tremendous expansion of industry being keyed to defense effort was detailed by G. R. Prout, manager, industrial department, General Electric Company, Schenectady, New York, in his address. In citing a specific case, he referred to General Electric Company experience. In the past 12 months the firm has hired and trained 40,000 men and is adding about 1000 more each week. The firm obtained some 700 young engineers from schools last spring and is currently adding to this type of manpower. On the other side, some 20 buildings have been completed or are under construction at the moment. To emphasize his remarks, not only of the terrific advances in industry but in the necessity of limiting the time factor as much as possible, he showed a motion picture of varied defense efforts.

B. J. Martin, publisher, "Electrified Industry," Chicago, presented to the group a verbal sketch of new uses for electricity. These included the use of infra-red vibration in drying varnishes and finishes from the inside out, the new process in electrical riveting, wood hardening by application of radiant heat, new methods of electrical plating, energy welding, the use of electricity in the pre-fabrication of houses as a major instrument in the trend from custom construction to straight line production.

E. A. Armstrong, Public Service Company of Northern Illinois, Chicago, described how electric utilities have met the demand for power. He reported on a survey made of 24 plants and outlined their equipment in terms of capacity in 1939, the equipment then ordered or installed, and present generating capacity, with prospects of adding additional generating units. He detailed the increased use of power, showed what proportion of it went to normal industry and what part to defense effort. He concluded by holding that power firms have to date ably and thoroughly supplied defense efforts and that this ability will not be seriously hampered by increased demands.

The conference was concluded by a discussion by Ray K. Glenn, Dallas, and by a report of the secretary-treasurer.

H. E. Roberts, Empire District Electric Company, Joplin, Mo., was chosen president of the association. K. K. Kreamer, Houston Power & Light Company, Houston, and P. M. Cordell, Texas Electric Service Company, Fort Worth, were elected vice president and secretary treasurer, respectively.

Six directors were nominated and elected. These will serve through 1942-43 with the six previously elected for 1941-42. The new directors will take office as of January 1, 1942.

Retiring directors are A. M. Young, H. E. Roberts, G. H. Weckel, F. V. Armistead, E. L. Robinson, E. A. Armstrong.

Those serving through 1941-42: K. K. Kreamer, W. H. Stueve, J. E. Elliott, Lewis Blalock, O. W. Jones, B. E. Lowe.

Newly elected: H. E. Roberts, E. A. Armstrong, P. M. Cordell, H. C. LeVois, A. M. Young, Glenn Coleman.

World-Wide Developments

Canadian Oil-Sand Plant Seriously Damaged by Fire

Fire has partly destroyed the new oil sands processing plant of Abasands Oils, Ltd., near Fort McMurray, Alberta, with an estimated damage of about $200,000. The separation unit (in which oil was extracted from the sands with hot water), the boiler house, machine shop and laboratory were burned. Howard Stutchbury, manager, said cause of the fire has not been determined. It is understood that full insurance was carried on the plant and that reconstruction will begin at once.

The plant was put into operation last spring as the first commercial installation to extract oil from the extensive deposits of Athabaskan oil sands in northern Alberta Province. With a capacity of 400 tons of sand per day, the plant was designed to produce about 350 barrels of crude oil daily. After extraction, the oil was thermally cracked. In September the plant processed 4000 tons of sands and extracted 3440 barrels of oil, from which were made 192 barrels of gasoline and 1162 barrels of diesel and burner oil.

Y.P.F. Limitations Defer Argentine Oil Nationalization

Inability of Yacimientos Petroliferos Fiscales (Y.P.F.) to expand oil production in Argentina to desired levels is proving a serious obstacle to Argentine groups which have sought to have the oil industry nationalized. Such is the view expressed last week by officials of two major companies having interests in that country.

It is pointed out that two large Buenos Aires newspapers, La Prensa and El Mundo, have been particularly outspoken in criticizing the government's oil policies, declaring that they have been an important factor in the current serious shortage of petroleum products. These papers take the position that inasmuch as Y.P.F. has been unable to make Argentina wholly or largely self-sufficient as regards crude production, the government should end its policy of restricting the opportunities open to foreign oil companies and encourage these companies to do more drilling. Argentina is in the midst of a severe rationing program this year and has had to resort to such substitute fuels as alcohol, gas, coal and cottonseed cake.

The Argentine congress adjourned last fall without acting on a bill which would have permitted the government to buy out the remaining private oil interests in the country at figures to be reached through negotiation. Congress also failed to act on a measure authorizing the government to accept a $120,000,000 loan from the U. S. Export-Import Bank for construction of a pipe line from the Mendoza fields to San Lorenzo, on the Parana River. One American oil company official said there is possibility that the oil industry nationalization bill will be again introduced when congress convenes next May following the March elections. Belief was expressed that the measure, in view of opposition against it in and out of congress, probably would not be adopted. Provincial elections, at present under way, are considered as roughly indicative of the way the national elections may go next year. At this time the radical groups have a majority in the national chamber of deputies but not in the senate.

Production by Y.P.F., although markedly increased throughout 1940, has shown no such increase this year, the average daily production through September being 37,400 barrels. September daily production, 38,300 barrels, was only slightly more than the January average of 37,500 barrels. Production by private companies this year through August, averaging a daily total of 21,400 barrels, has been slightly less than last year and has been for several years a steadily declining percentage of total Argentine production.

Two Tests Started In Colombia

Two new tests were recently spudded in the Magdalena River Valley region of Colombia. That the Carare Petroleum Company spudded in McCarthy 1 on November 21 is confirmed. The well is on the east bank of the river and on a 20,520-hectare concession held by the company, a Socony-Vacuum Oil Company affiliate. On November 20, Palagua 1 was spudded on the Obregon Arjona concession, of 36,757-hectares, held by La Perla Petroleum Company (Shell).

Conditions Aid Government In Holding Oil Prices Down

Markets are generally firm, from well to retail outlet, with prices almost wholly unchanged, as conditions in the industry currently tend to aid the government in its efforts to prevent price increases.

The transportation problem was further alleviated at the end of November with return of 25 more tankers from Britain in addition to 15 previously brought back for serving the East Coast. Meanwhile, more new tankers have come off the ways, and ample facilities for coastwise shipments now are available.

The changed tanker situation has removed some of the pressure for higher prices of products in the Eastern district, not only assuring adequate supply but also contributing toward a reduction as of December 1 in tanker rates. The Maritime Commission ordered a 20 percent reduction in rates from Gulf and Caribbean ports to East Coast ports, putting a top of 40 cents a barrel on gasoline between Port Arthur and New York, against 50 cents previously.

Weather conditions also have had an important effect on prices, having been mild, with the result that demand for burning oil has been relatively light.

Simiarly, somewhat larger crude oil production allowables for December probably will largely satisfy demand for the raw material and reduce pressure for higher crude postings.

While the continued relatively mild weather has prevented any scarcity of burning oils, it has been conducive to comparatively large demand for gasoline and firm prices of that product.

Shipments of lubricants have continued brisk, with demand stimulated by Navy and lease-lend purchases. Neutral oils have been in especially good demand, although requirements of bright stocks also have been relatively large.

Refiners were not quoting prices on wax, pending clarification of questions that have arisen in connection with ceilings placed on that product by the Office of Price Administration.

Refinery Runs Near Peak; Product Stocks Normal

Latest statistics of the industry, covering the week ended November 29, reflected near-capacity refinery runs and maintenance of a normal situation with regard to stocks of the major petroleum products. Crude production was down sharply, but in the previous week it had been at an all-time high materially exceeding any earlier rate of output.

Having averaged 4,115,000 barrels daily, runs to stills were only 5000 barrels under their all-time record, refineries having operated at more than 95 percent of their rated capacity.

The runs of 4,115,000 barrels daily were 603,000 barrels (17.1 percent) above the daily average runs of 3,512,000 barrels for November of last year.

Stocks of finished and unfinished gasoline in the United States were increased a million barrels, a normal amount for the time of the year. Having risen to 85,525,000 barrels, the storage was 6,000,000 barrels (7.6 percent) greater than a year previously. The week brought additions of around 200,000 barrels each on the East Coast, on the Louisiana Gulf Coast and in California, and one of over 400,000 barrels on the Texas Gulf Coast. The East Coast now has 2,000,000 barrels more gasoline than at this time last year, the present total being 19,435,000 barrels. Other gains include those of 1,760,000 barrels for Indiana - Illinois - Kentucky, 1,317,000 barrels for Oklahoma-Kansas-Missouri, 763,000 for Inland Texas, 417,000 for Coastal Louisiana, 286,000 for Appalachian, and 205,000 for Rocky Mountain states. The Texas Gulf Coast has a million barrels less than a year ago, and smaller decreases are indicated for North Louisiana-Arkansas and California.

Seasonal withdrawals of light fuel oil from storage continued, but stocks of 54,141,000 barrels on November 29 were over 7,000,000 barrels (15.7 percent) in excess of those held at the corresponding time last year. A large part of the year-to-year increase has occurred on the East Coast, where present stocks of 22,000,000 barrels are 5,600,000 barrels greater than those held a year ago. All other districts except one also show increases, with California stocks up nearly 3,000,000 barrels. The only area with less gas oil and distillate fuel in storage than a year ago is the Texas Gulf Coast, which shows a 2,000,000-barrel decrease.

Residual fuel oil stocks outside California are practically the same now as at this time last year, although the California inventory is down about 10,500,000 barrels. On the East Coast, stocks of 12,539,000 barrels on November 29 reflected a 608,000-barrel addition for the week and a climb above last year's trend, as storage November 30 last year totaled 12,512,000 barrels. The Appalachian district has a little more than a year ago, and Indiana-Illinois-Kentucky 1,236,000 barrels more, while small gains are indicated for Oklahoma-Kansas and the Louisiana Gulf Coast. The Texas Gulf Coast has a half million barrels less, with roundly 8,000,000 barrels on hand, and smaller decreases are registered by Inland Texas, North Louisiana - Arkansas, and the Rocky Mountain states.

Trends of Operations and Changes in Stocks

Figures are from American Petroleum Institute weekly reports, except those on crude stocks, which are from Bureau of Mines weekly reports

WEEK ENDED	Crude Oil Production (Barrels Daily)	Crude Runs to Stills (Barrels Daily)	Crude Oil Stocks (Barrels)	Gasoline Stocks (Barrels)	FUEL OIL STOCKS	
					Gas Oil & Dist. Fuels	Residual Fuel Oil
1939:						
April 22	3,526,700	3,280,000	277,156,000	[2]87,769,000	21,085,000	105,035,000
April 29	3,568,200	3,405,000	278,440,000	86,794,000	[7]25,844,000	[7]108,409,000
May 6	3,580,900	3,275,000	[2]278,607,000	85,216,000	26,167,000	108,597,000
August 5	[2]3,909,400	3,445,000	268,982,000	76,431,000	35,601,000	114,512,000
August 26	[1]1,690,800	3,475,000	246,982,000	73,475,000	37,722,000	116,237,000
October 7	3,435,850	3,505,000	231,564,000	[6]71,152,000	38,549,000	114,397,000
October 21	3,771,550	[2]3,650,000	[3]229,127,000	72,122,000	39,358,000	115,060,000
1940:						
January 27	3,611,600	3,470,000	237,339,000	87,914,000	27,407,000	103,015,000
February 24	3,732,100	3,490,000	240,836,000	96,719,000	25,390,000	103,419,000
March 30	3,841,250	3,585,000	250,561,000	101,370,000	23,778,000	105,081,000
April 20	3,858,550	3,535,000	254,881,000	[1]102,817,000	24,779,000	103,323,000
April 27	3,845,250	3,555,000	256,670,000	102,452,000	24,997,000	102,552,000
May 25	3,835,650	3,580,000	259,330,000	100,297,000	28,356,000	104,015,000
June 22	3,846,450	[2]3,690,000	260,891,000	97,276,000	32,751,000	104,683,000
June 29	3,639,550	3,625,000	262,059,000	95,142,000	33,590,000	104,486,000
July 27	3,690,400	3,555,000	262,579,000	90,173,000	38,981,000	105,924,000
August 31	3,501,350	3,575,000	265,865,000	85,393,000	44,766,000	108,774,000
September 28	3,799,950	3,600,000	263,609,000	82,273,000	47,985,000	108,450,000
October 26	3,640,300	3,565,000	262,746,000	80,891,000	48,893,000	108,475,000
November 9	3,584,200	3,510,000	261,631,000	[6]79,847,000	48,408,000	107,687,000
November 30	3,335,050	3,510,000	262,679,000	80,284,000	46,212,000	106,618,000
December 28	3,385,500	3,585,000	261,552,000	83,274,000	42,266,000	102,620,000
1941:						
January 25	3,599,100	3,625,000	260,093,000	88,762,000	39,039,000	100,297,000
February 22	3,629,650	3,590,000	261,783,000	95,812,000	34,381,000	98,631,000
March 29	3,746,550	3,625,000	266,187,000	[2]99,727,000	29,949,000	96,152,000
April 26	3,726,850	3,675,000	266,149,000	96,647,000	29,543,000	94,732,000
May 31	3,786,100	3,699,000	262,356,000	93,845,000	33,524,000	92,757,000
June 28	3,847,250	3,930,000	259,399,000	91,461,000	35,732,000	92,896,000
July 12	3,870,750	4,090,000	255,567,000	89,561,000	37,812,000	92,699,000
August 2	3 695,250	3,845,000	252,535,000	86,779,000	41,433,000	94,800,000
August 30	4,004,700	4,070,000	249,413,000	81,672,000	45,351,000	95,052,000
September 27	4,060,000	3,980,000	246,649,000	81,003,000	49,950,000	95,251,000
October 4	3,860,750	4,015,000	246,144,000	[6]80,870,000	49,553,000	96,016,000
October 18	4,110,550	[1]4,120,000	243,605,000	82,584,000	52,403,000	95,800,000
October 25	4,098,800	4,060,000	242,261,000	83,343,000	53,183,000	95,295,000
November 1	4,071,200	4,080,000	243,340,000	83,223,000	53,766,000	96,527,000
November 8	4,096,100	3,945,000	241,829,000	82,777,000	54,643,000	95,815,000
November 15	4,086,850	4,010,000	240,399,000	83,412,000	[2]54,983,000	95,993,000
November 22	[1]4,336,850	3,995,000	241,956,000	84,579,000	54,396,000	95,982,000
November 29, 1941	4,086,000	4,115,000	.....	85,525,000	54,141,000	95,971,000
November 29, 1940	3,335,050	[8]3,512,000	[4]261,680,000	79,495,000	46,785,000	104,806,000
Amount of change in past year	+750,950	+603,000	—19,724,000	+6,030,000	+7,356,000	—8,835,000
Percent change in past year	+22.5	+17.1	—7.5	+7.6	+15.7	—8.4

[1] All time peak. [2] Peak for year. [3] Lowest since April, 1922. [4] Stocks, November 23, 1940.
[5] Lowest since October, 1922, due to shut down of six Mid-Continent states. [6] Lowest for year.
[7] Prior to April 29, 1939, data did not include stocks at terminals, in transit, etc., except in California.
[8] November, 1940, daily average.

Wholesale Prices of Refined Products in Principal Markets

	Range Last Week (Cents a Gal.)		Changes from Week Before	
REFINED GASOLINE				
Oklahoma Refineries:				
60 Octane and Under	5¼	5⅝	...	...
63-66 Octane	5⅝	6	...	...
72-74 Octane	6	6⅜	...	...
80-82 Octane, Ethyl	6¾	7½	...	+¼
Mid-Western Tank Car:				
60 Octane and Under	5¼	5⅝	...	...
63-66 Octane	5⅝	6	...	...
72-74 Octane	6	6⅜	...	...
80-82 Octane, Ethyl	7⅛	7⅝	—¼	...
New York Harbor:				
68-70 Octane	8	8	...	...
72-74 Octane	8	8⅛	...	...
Min. 80 Octane, '39 Research	8½	9	...	...
Gulf Coast:				
60 Octane unleaded	5⅝	5⅝	...	...
65 Octane unleaded	5⅞	5⅞	...	...
68 Octane unleaded	6¼	6¼	...	...
70 Octane unleaded	6¾	6⅜	...	...
72-74 Octane leaded	...	...	...	...
Min. 80 Octane, '39 Research	6½	6½	...	...
NATURAL GASOLINE				
Grade 26-70:				
F.O.B. Group 3	5⅛	5⅛	...	...
F.O.B. Br'kenr'ge, Tex.	4¾	4¾	...	...
KEROSENE				
Oklahoma Refineries:				
41-43 water white	4⅝	4⅝	...	...
42-44 water white	4⅛	4⅛	...	...
Mid-Western Tank Car:				
41-43 water white	4⅝	4⅝	...	...
42-44 water white	4⅛	4⅛	...	...
New York Harbor	5⅜	5⅛	...	...
RANGE OIL				
At Oklahoma Refineries	4	4⅜	...	...
In Mid-Western Market Group 3, basis	4	4¼	...	...
LIGHT FUEL OILS				
Oklahoma Refineries:				
No. 1 straw	3½	4¼	...	...
No. 3	3½	3⅝	...	...
Mid-Western Tank Car:				
No. 1 white	3⅞	4⅛	...	...
No. 3	3½	3¾	...	...
New York Harbor:				
No. 1	5⅜	5⅛	...	...
No. 3	5¼	5¼	...	...

	Range Last Week (Per Bbl.)		Changes from Week Before	
HEAVY FUELS				
Oklahoma Refineries:				
No. 6	$0.90	$0.90	...	...
Mid-Western Tank Car:				
No. 5	.85	.85	...	...
No. 6	.85	.87½	...	...
New York Harbor:				
No. 5	1.65	1.75	...	...
No. 6	1.35	1.50	...	...
BUNKER C FUEL OIL (Per barrel, ships' bunkers)				
Gulf Coast	$0.85	$0.95	...	...
New York Harbor	1.35	1.50	...	...
DIESEL OIL (Per barrel, ships' bunkers)				
Gulf Coast	$1.65	$1.80	...	...
New York Harbor	2.15	2.15	...	...
LUBRICATING OIL (Cents a gal.)				
Oklahoma Refineries:				
Bright Stock, 150-160 viscosity at 210°, 10-25 pour test	22½	23	...	...
Neutral oil pale No. 3 Color, 150 viscosity at 100°, 0-10 pour test	14½	14½	...	...
Western Pennsylvania:				
Bright Stock, 145-155 viscosity at 210°, 25 pour test	25	26	...	...
Neutral Oil No. 8 Color, 150 viscosity at 70°, 25 pour test	31	31	...	...

Crude Oil Production Virtually Unchanged

United States crude oil production increased slightly in the week ended December 6 in averaging 4,103,000 barrels daily. That was 1550 barrels a day more than the output in the previous week, but 36,000 less than daily average demand for domestic crude in December, as forecast by the Bureau of Mines.

Texas was up nearly 20,000 barrels to 1,494,600 daily and exceeded demand about 15,000 barrels a day. California was down 5500 barrels to 639,500 daily and fairly well conformed with demand. Oklahoma, off 7000 barrels to 418,250 daily, fell short of the indicated demand for its crude by over 40,000 barrels. Illinois, down 3600 barrels to 400,000, was about 25,000 under demand. Louisiana showed a 10,000-barrel increase to 359,250 daily and was about 20,000 above demand. Kansas output was down 8500 barrels to 240,700 per day and underproduced demand by 20,000 barrels daily. New Mexico, down 900 barrels, averaged 117,600 daily, which was 1500 more than estimated demand.

Crude Runs to Stills At Record in September

Daily average crude runs to stills set a new record of 4,049,000 barrels in September, 31,000 barrels above the August figure and 457,000 barrels above September, 1940, runs, it is reported by the Bureau of Mines.

United States Crude Oil Production Up Slightly

Estimates Compiled by The OIL WEEKLY

DISTRICT OR STATE	Bureau of Mines Estimate of Daily Demand (Dec.)	State Allowable (Barrels Daily in Dec.)	BARRELS DAILY FOR WEEK ENDED Nov. 29	Dec. 6
TEXAS:				
Texas Panhandle	.....	.....	85,500	98,800
North Texas	.....	.....	106,800	108,400
West Central Texas	.....	.....	31,200	31,500
West Texas	.....	.....	287,300	290,100
East Central Texas	.....	.....	85,700	86,500
East Texas Field	.....	.....	370,200	370,200
South Texas	.....	.....	216,500	217,300
Texas Gulf Coast	.....	.....	292,400	291,800
Total Texas	1,479,700	1,500,760§	1,475,600	1,494,600
CALIFORNIA:				
Long Beach	.....	.....	39,200	39,100
Midway-Sunset	.....	.....	42,100	50,100
Kettleman Hills	.....	.....	40,100	39,000
Wilmington	.....	.....	86,900	88,700
Others	.....	.....	436,700	422,600
Total California	635,800	613,200*	645,000	639,500
OKLAHOMA:				
Oklahoma City	.....	.....	87,550	80,000
Seminole Area	.....	.....	108,050	108,275
Others	.....	.....	229,650	229,975
Total Oklahoma	460,000	428,000	425,250	418,250
ILLINOIS:				
Salem	.....	.....	69,300	69,000
Louden	.....	.....	63,500	60,000
Centralia	.....	.....	8,850	8,800
Other New Pools	.....	.....	250,050	250,250
Old Pools	.....	.....	11,900	11,950
Total Illinois	426,500	.....	403,600	400,000

DISTRICT OR STATE	Bureau of Mines Estimate of Daily Demand (Dec.)	State Allowable (Barrels Daily in Dec.)	BARRELS DAILY FOR WEEK ENDED Nov. 29	Dec. 6
LOUISIANA:				
North Louisiana	.....	.....	81,750	81,550
South Louisiana	.....	.....	267,200	277,700
Total Louisiana	340,000	354,705	348,950	359,250
KANSAS	260,700	264,000	249,200	240,700
NEW MEXICO	116,100	117,000	118,500	117,600
EASTERN STATES:				
Pennsylvania Grade	73,900	.....	76,000	76,500
Others, Eastern	23,000	.....	18,500	18,500
Total Eastern States	96,900	.....	94,500	95,000
MOUNTAIN STATES:				
Wyoming	81,900	.....	82,900	82,150
Montana	20,700	.....	21,300	21,200
Colorado	5,800	.....	5,200	5,300
Total Mountain States	108,400	.....	109,400	108,650
MICHIGAN	52,300	59,950†	58,100	57,150
INDIANA	19,700	.....	18,150	18,350
ARKANSAS	76,500	75,297	73,200	73,950
MISSISSIPPI	60,300	.....	76,100	74,000
NEBRASKA	6,100	.....	5,900	6,000
‡Total 8 Prorated States	3,421,100	3,412,912	3,393,800	3,401,000
Total United States	4,139,000	.....	4,101,450	4,103,000

* Recommendation of Conservation Committe of California Oil Producers.

† No definite state allowable fixed under prescribed regulations. Figure shown here represents daily average production in 4 weeks ended November 22.

‡ Texas California, Oklahoma, Louisiana, Kansas, New Mexico, Arkansas, Michigan.

§ Calculated daily average of actual production at beginning of month, allowing for under production of 3½ percent below net allowable, which was figured at 1,555,192 barrels daily as of December 1. However, allowable normally increases as new wells are completed, and consequently, actual daily average production for month may be expected to be slightly greater than average as calculated for December 1. Under December order, most Texas fields were ordered shut down December 6, 7, 13, 14, 21, 25, 28 and 30.

U. S. FIELD OPERATIONS

Illinois Basin

Parkersburg Production Extended Quarter Mile

Casing set at two White County wildcats; saturation cored at outpost to Rural Hill field, Hamilton County; plug to be drilled at Clay County wildcat; outpost to Parkersburg field flows from McClosky.

White County: W. C. McBride's Daly 1, C N½ SW SW 7-4s-10e, cored sand at 3265-76 ft and on drill stem opened 30 minutes flowed with 1950 ft of drill-pipe in hole; also flowed when all but 300 ft of pipe had been removed; casing set at 3252 ft, total depth 3276 ft. Tar Springs and other sand horizons were dry at Daly 1.

Just north of Maunie Joe Dawson's Clark 1, NW SW NE 36-5s-10e, set pipe on Aux Vases after drill-stem test opened one hour resulted in recovery of 60 ft of oil-cut mud.

Hamilton County: Dave Ring et al's Craddock 1, NE SE NE 22-6s-5e, half mile southwest of production in Rural Hill district rigging up standard tools to drill plug and test Aux Vases at 3190-3212 ft.

Clay County: B. F. Williams' Nolan 1, S½ SE NW 10-2n-7e, a mile and a half west of the Clay City field, WOC with casing on McClosky after test flowed on drill-stem after 15 minutes. Saturation is at 3067-82 ft.

Edward County: Joe Bander and R. B. Martin's Wells 1, west outpost to the Parkersburg field, C E½ SW NE 31-2n-14w, flowed 1535 bbls in 15½ hours following a 5000-gallon acid treatment to extend the field a quarter of a mile.

Indiana

Posey County: Three miles south and west of New Harmony, near the Wabash River, Sells Petroleum's Elliott-Hickman 1, SW SE SE 15-5s-14w, cored 14 ft of Waltersburg sand saturation at 2262-76 ft which on drill-stem test showed 60 ft of oil-cut mud and gas. In addition, Palestine sand at 2060-66 showed saturation as did the Mansfield at 1450-58 ft.

In the new field northwest of Mt. Vernon, Sinclair-Wyoming Oil Co.'s Hageman 2, SW NW SE 1-7s-14w, was drilling at 2200 ft after coring promising Waltersburg saturation at 1998-2012 ft. Carter and Gulf Refining Co., meanwhile, have staked locations for two new joint operations in the new field. Carter-Gulf's Maier 1, the discovery, is pumping 750 bbls daily from two pays, the Waltersburg and Cypress sands.

Kentucky

Henderson County: Rotary tools were moving in for a wildcat three miles south of Mt. Vernon, Ind., N. V. Duncan's Sneed 1, C N½ NW NE 14-Q-20, Gulf Refining Co. farmout. Another wildcat location is S. D. Jarvis and Ike Taylor's Otto Bietschu 1, mile and one-half south of Reed 3-O-36.

Union County: Sinclair-Wyoming Oil Co. was rigging up rotary for a wildcat midway between Shawneetown, Ill., and Uniontown, Ky., Vittitow 1, 2-O-18. It will be a St. Louis test. Drilling at 1300 ft was a new wildcat northwest of Morganfield, Toss Semples 1, 21-O-19.

Oklahoma

State Gets Biggest Well In Apache Extension

Wild well opens new shallow production; Oklahoma's biggest well of 1941 added in Apache extension; new pool looms for central Pottawatomie County; Earlsboro gets two extensions; gas area added to Creek County; Perkins pool extended.

Stephens County: Glen Grimes' Baker 1, SE NW NE 35-2s-6w, drilled to 1838 ft in Arbuckle lime, well blew out and wild for 24 hrs making est 150 bbls oil per hour, 15,000,000 cu ft gas, now killed with mud, erecting tankage, shallow well nearly ringed by dry holes, opens new area.

Caddo County: Texas Co.'s Mulkahay 1, SW NW SE 2-5n-12w, has extended Apache pool one location southeast, drilled to 4392 ft in Wilcox sand, well flowed 892 bbls oil on 90 min potential rating of 14,256 bbls daily, 6,630,000 cu ft gas, producer largest in Sooner State during 1941. Operator's Mulkahay 2, NE NW SE Sec. 2, nearing pay zone at 3400 ft; 10 other tests now drilling.

Pottawatomie County: Kerlyn Oil Co.'s Kirk 1, NW NE SW 1-8n-4e, opens new Viola lime pool 2 mi north of West Earlsboro field, well plugged back from unproductive second Wilcox sand and perforated in Viola 4101-4295 ft, acidized 2000 gals, well swabbed 63 bbls oil, no water in 8 hrs, to reacidize and test.

Seminole County: Amerada Petroleum Corp. et al's Edward 6, NW SE NE 22-9n-5e, extends Earlsboro pool location south, well drilled to 3467 ft in Earlsboro sand, flowed 225 bbls oil through open 2-in tubing in 24 hrs. Eason Oil Co.'s Anderson 2-A, SE NW NE 22-9-5e, extends pool location southwest, well now testing with 2000 ft fluid in hole at 3430 ft in Earlsboro sand topped at 3409 ft.

Creek County: Shell's Bishop 1, NE SW 12-15n-8e, west of Bristow district, opens new gas production, well plugged back from dry second Wilcox sand perforated 3083-91 ft in Dutcher sand, completed for 7,500,000 cu ft gas daily.

Lincoln County: Portable Drilling Co.'s Teter 1, NWc SE 24-17n-2e, extends Perkins pool 2 locations east, drilled to 4497 ft in Hunton lime topped at 4493 ft, well flowed 20 bbls oil per hour on initial test through ¼-in tubing choke.

Kansas

Gusher Opens New Area in Barber County

Heavy extension given Peace Creek pool; wild gusher opens new production in Barber County; prospective Simpson discovery for Pawnee County; Dopita field extended; Barton County wildcat cores saturation.

Reno County: Leader Oil Co.'s Tonn, 1, SWc 11-23s-10w, extends Peace Creek pool 1½ mi to northeast. Well drilled to 3761 ft in Viola lime topped at 3755 ft, flowed at rate of 45 bbls oil per hour on 12 hr test.

Barber County: Prior & Lockhart's Massey 1, C EL NE NW 35-30s-15w, 9 mi southwest of Lake City pool, opens new oil area and also first Kansas City-Lansing lime production in the county. Operator drilled test to 4555 ft in Viola lime. Kansas City zone was topped at 3907 ft. Seven-in set at 4448 ft to test Viola. While perforating well came in and ran wild for 1 hr before controlled. Production heavy but unestimated.

Pawnee County: Skelly Oil Co.'s Yeager 1, SWc 32-22s-15w, southeast of Larbed, may open new Simpson production. Carried to 4000 ft in unproductive Arbuckle lime test, plugged back and perforated Simpson dolomite 3978-88 ft for show of oil and water. Squeezed off. Now waiting on cement.

Rooks County: George W. Vance's Moos 1, C EL SE SE 6-9s-17w, extends Dopita field 1 mi south. Well now testing 2 bbls oil hourly at 3406 ft in Arbuckle lime topped at 3390 ft, after 2000 gals acid.

Barton County: J. J. Lynn et al's Kraft 1, C S½ NW NW 26-16s-11w, may open new field or extend Kraft-Prusa area 1½ mi east. Test now waiting cement. Cored saturated Arbuckle lime 3355-70 ft. Seven-in set on lime top.

West Texas

Crockett County Wildcat Promising Permian Producer

Semi-wildcat in western Crockett County is promising producer from shallow Permian. Ellenberger discovery in northeastern Pecos County increases gas flow out of proportion to fluid yield, and shallow-pay discovery in Conry-Davis pool makes natural flow. Pending lease sale on north edge Slaughter field involves 26 immediate offsets.

Ellenberger Discovery: Gulf and L. H. Wentz's Millar 2, northeastern Pecos County wildcat 4½ miles south of Girvin, fulfilled earlier promise of establishing new and shallowest Ellenberger producing area on flank of Fort Stockton high, in flowing 3 bbls fluid hourly, 4 to 7 percent bs&w, with 6,000,000 ft gas daily, following 5000-gallon acid treatment. Production from dolomite below 7-in casing seat at 4282 ft to 4363 ft, with prolific flow of gas, as indicated by drill-stem test and electrical formation survey, cased off in upper Ellenberger, topped near 4150-ft level, elevation 2534 ft. Source of water not definitely fixed, although could be combination acid residue and rotary returns plus bottom-hole water, so thorough production test scheduled before plugging back, or deepening. Fancy prices

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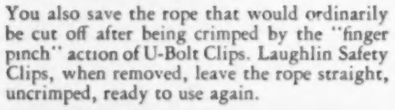

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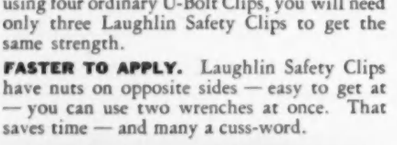

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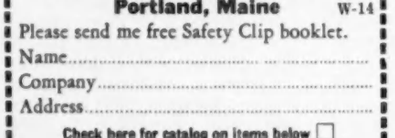

being paid for all available acreage along northwest to southeast trend across northeastern Pecos County from Yates yield via the Millar producer to the Conry-Davis pool. Series of Ellenberger producing areas of varying size expected to result from projected explorations.

Delaware Prospect: Pure Oil Co.'s T.P. Land Trust 1-A, extreme western Pecos County, drilling 5268 ft in gray sand and lime, swabbed 24 bbls fluid, 2 to 10 percent bs&w, previous 24 hours. Oil production mostly from Delaware sand 5082-5158 ft, elevation 3311 ft. Scheduled to be deepened to water table, then plug back for nitro shot.

Semi-wildcat: Humble's Owens 1, C SW SE HE&WT Sec 8, Blk GG, 1½ miles northwest of R. H. Henderson et al's Clara Couch pool 2186-foot flowing discovery in western Crockett County, filled 650 ft with oil while drilling broken sandy-lime 1950 ft, with 5½-in on top porous lime 1904 ft. Topped Yates sand and brown lime at 975 ft and 1690 ft, respectively, elevation 2501 ft.

Winkler Deep: Magnolia's Walton-State 20, wildcat between Keystone and Kermit fields, testing perforations 5425-50 ft in lower Permian, having previously yielded water from perforations 4900-10, 4860-4900 and 4910-50 ft, and plugged back from hard Silurian chert 8445 ft.

Pecos County: Magnolia and George Abell's Myrick-State 1-B, south offset to Conry-Davis 2900-foot pay discovery, flowed 194 bbls oil natural 1-in tubing choke on 24-hour gauge, perforated 2250-2300 ft. This is new oil zone for the pool, and may embrace greater area than the discovery pay, which is the equivalent of Tubb section of Permian. The above well failed to produce in 3900-foot lime. The Texas Co.'s Williams 1 and Sinclair Prairie's Lutz 1 failed to make commercial producers in 3900-foot lime after acid treatments, and are due to plug back to 2300-foot lime.

Gaines County: Amerada's Hudson 1, 3 miles west of regular Permian production in Wasson field and originally scheduled to drill to 7000-foot level, was treating with 5000 gallons acid after yielding negligible amount oil and gas following 96-quart nitro shot 4952-5000 ft. Plans to make deep test were cancelled and 5½-in cemented at 4900 ft on strength of porosity and saturation logged in the regular Wasson pay. Hudson 1 topped brown lime and San Andres at 4040 ft and 4560 ft, respectively, elevation 3616 ft.

Slaughter Field: Mallet Land & Cattle Company, large fee owner of producing acreage in Cochran and Hockley counties with unleased proved and semi-proved acreage on north edge of field, will accept sealed bids on December 11 for leases covering 44 labors, aggregating 7795 acres, according to Sam C. Arnett of Lubbock, receiver. Litigation among stockholders has prevented acceptance of numerous lease offers the past year, and there are now 26 direct producing offsets. Receiver's proposals specify royalty payment of not less than ⅜ of the gross, with additional 1/16 of the gross should the posted price of oil reach $1.50 or more; minimum cash bonuses totalling $145,000; obligation to employ 3 rigs within 30 days after confirmation of each lease; and maintain continuous development until each labor has a minimum of 5 wells. The terms set forth automatically restrict bidding to comparatively few independents and majors.

Sand Hills Ellenberger: Humble et al's Tubb 2-B-X, ¾ mile southeast outpost for Ellenberger area, failed to make commercial producer from dolomite 5775-88 ft, elevation 2553 ft, and completing from regular Permian. Hole filled 4800 ft with oil, 2.4 percent bs&w, after acidizing through perforations 4300-4400 ft. Standard of Texas' Barnsley 1, C SE SE PSL Sec 27, west offset to Gulf's Tubb 1-B and in the south extension sector, attempting second drill-stem test at 5757 ft after first try at 5705-57 ft failed, although favorable saturation and free oil logged at intervals. Barnsley 1 entered Ellenberger 5701 ft, elevation 2459 ft, being 100 ft low to offset, providing exceptionally steep west dip. Should it make well without bottom-hole water, other wells in area can count on additional pay in deepening.

Stephens Wildcat Gas Well From Marble Falls

Stephens County wildcat makes gasser from Marble Falls sand. Somervell County prospect abandoned in Ellenberger. Coleman County discovery makes pumper with considerable water, and confirmation test for Jim Ned pool plugging back to upper pay.

Gas Strike: Tom G. Shaw, Trustee's Whalen 1, northewest corner TE&L Sec 1088, northeastern Stephens County, gauged 8,880,000 ft wet gas natural through open tubing, with 1900 pounds closed pressure on tubing and casing. Production from Basal Marble Falls 4077-95 ft, elevation 1111 ft, having plugged back from Ellenberger 4689-4707 ft to 4127 ft, 5½-in cemented 4077 ft. Open flow volume gas rated above 20,000,000 ft daily, as well producing with bit attached to tubing due to blowing out while drilling plugs.

Ordovician Failure: M. E. Davis and Plymouth Oil Co.'s Cousins 1, Somervell County geophysical prospect and 2 miles south Glen Rose, abandoned 6505 ft in Ellenberger, topped 5450 ft, elevation 814 ft.

Coleman County: Brannon - Murray West Coast Petroleum Co.'s Norris 1, SWc of northeast 160 acres of James Greenwood Survey No. 304, 4 miles northeast Talpa, pumped 76 bbls 40-gravity oil, plus 33½ percent water, acidized through Strawn perforations 2600-30 ft. Hole plugged back from 3265 ft. Lewis Production Co.'s Greer 1, north offset to Merry Bros. & Perini's recent discovery in Jim Ned area, yielded small show oil and gas with mud on drill-stem test at 3910-21 ft then proved dry in drilling through the Gray sand to 3970 ft. Hole plugged back to 3926 ft to cement 7-in at 3910 ft. Anderson-Prichard Oil Corp.'s Mathews 1, south offset to discovery, drilling 3255 ft.

North Texas

Kerlyn-Taylor Confirmed With 42-Barrel-Hour Flow

Confirmation test for Kerlyn-Taylor pool, Young County, responds to acid with oil flow. Mississippian lime produces in Burns-Browning pool, Clay

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County. Third Ellenberger flowing well for Consolidated pool, Wilbarger County.

Young County: Rancho Oil Co.'s Taylor 1, north offset to Kerlyn Oil Co. and Phillips Petroleum Co.'s Bend discovery, responded to 500-gallon acid treatment of Bend at 4233-99 ft with flow of 42 bbls oil first hour, ¾-inch tubing choke.

Clay County: Shell's Williams 1, east offset to 3800-ft producer on north end of Burns-Browning pool, showing for small producer after acidizing through perforations 5668-90 ft in Mississippian topped at 5672 ft. Previous perforations and acid treatment at 5705-20 ft yielded small show oil with water. Hole plugged back from barren Ellenberger at 5772-5874 ft.

Prolific Ellenberger: Consolidated Oil Co. et al's Ancell 2-C, NW SE NE H&TC Sec. 2, Blk. 7, extended deep pay in Consolidated pool ⅜-mile southeast with flow of 108 bbls oil, ¾-inch choke, on 3-hour gauge from dolomite 4260-91 ft. This third Ellenberger producer for area is twin location to 3987-foot Strawn well, and was deepened from upper pay at 3776 ft.

Montague Wildcats: Bruce Sullivan et al's Johnson 1, 4 miles southeast of Montague, recovered 760 ft of rotary mud and salt water when tester used in Bend conglomerate 6397-6416 ft. Drilling resumed to fulfill 6500-foot depth contract. Youngblood - Foree - Stogner et al's Meador 1, 2 miles southwest St. Jo, fulfilled depth contract at 6001 ft in shale, and may deepen as it is above the Bend conglomerate. Continental's Winder 1, 2 miles east of Stoneburg, showed small volume free oil from perforations in Bend at 6050-64 ft, and to perforate lower section of Bend. This wildcat also yielded small amount oil with water from Mississippian, or Viola, at 6512-6610 ft before plugging back. Continental made location for J. F. Yorvell 1, NWc SE NE Sec 8, Limestone County School Lands, mile north by west of Winder 1.

Montague County: Pace Petroleum Co.'s Gilbert 1, ½ mile north of production in Benton-Holmes pool, recovered 90 bbls oil 4 hours on swabbing test through casing then flowed 40 bbls oil 4 hours through tubing before exhausting pressure. Production from sand 3013-20 ft.

Miscellaneous Wildcats: Magnolia's Borden 1, northeastern Jack County, considered failure in drilling dry dolomite 6912 ft, having entered Ellenberger 6873 ft. Bruce Sullivan et al's McCoy 1, Foard County, awaiting orders at 6019 ft, passed up nominal oil show in limey-conglomerate 5593-5601 ft. In Clay County, Continental's Spring 1, 2¾ miles southeast of Ralston, drilling shale 5550 ft, and Superior Oil of California's Scaling 1-A, drilling shale 4990 ft, having proved dry in Strawn.

East Texas

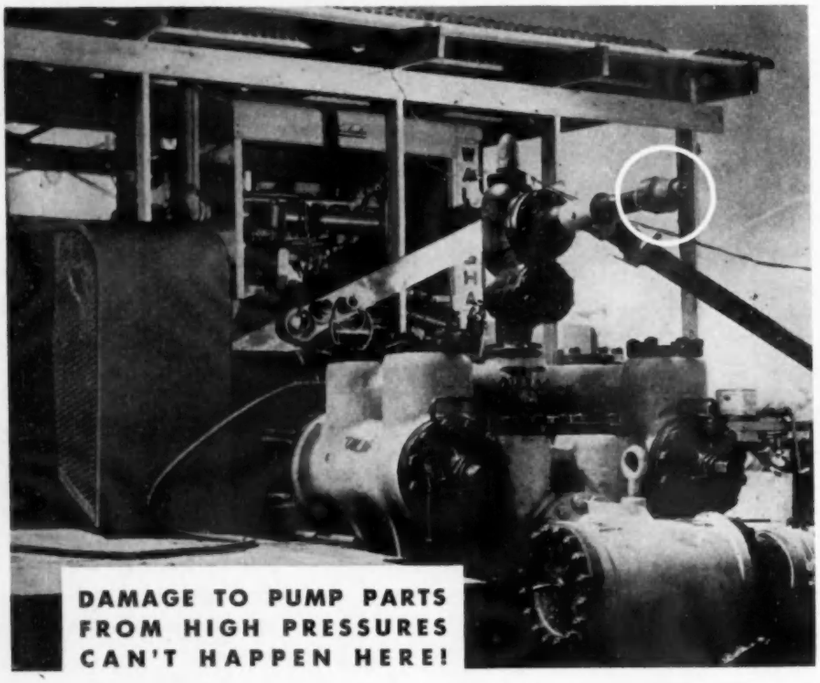
Development Increases In Chapel Hill Field

Trio of Woodbine wildcats are failures. Hopkins County prospect yields only water on pumping test. Development of multiple pay zones at Chapel Hill on upgrade, and a major company considering entry with line to buy available crude and distillate. Meantime, Shell has arranged to employ trucks in delivering its production and that from farmouts to its Kinsloe station in East Texas field.

Failures: In Rains County, Tex Harvey Oil Co.'s Hall 1, 2 miles northwest of Emory, yielded water in Woodbine 4336-4617 ft. H. L. Hunt Oil Co.'s Sullivan-Magnolia 1, Leon County, logged Woodbine section 6509-6729 ft, elevation 382 ft, and Placid Oil Company's McCain 1, Lafayette area, Upsher County, found thin section of Woodbine and quit in Georgetown 4390-4460 ft.

Hopkins County: Hinton and Talco Asphalt and Refining Co.'s Long 1, Paluxy prospect, showed small amount heavy oil when first put on pump, and then produced all water, perforated 4740-55 ft, plugged back from 4895 ft.

Cherokee County: Sinclair Prairie's Mullinix 1, Evan Bolton survey, authorized Woodbine test for the Maydelle prospect. Failures in general area afford ample subsurface control. In the Lone Star, or Ponta pool, Tom G. Shaw, trustee, deepened Bounds 1, originally completed April, 1938, at 4015 ft and found water in lower sand in coring to 4159 ft. Shaw and associates recently purchased the two remaining oil producers in pool, and plan additional development. Production is delivered by tank truck to an East Texas field refinery.



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Southwest Texas

Sun Company Assured Two New Oil Strikes

Sun Oil Co. assured two new strikes as a Duval County wildcat was flowing, casing was set in a Jim Hogg County test, and a deep operation in Starr County recovered gas and oil from several Frio and Vicksburg zones.

Mirando District: Sun's Wiederkehr 75, Sec. 55, Duval County, one mile northeast Government Wells field, opened new sand in Yegua, flowing 75 bbls daily through 3/16-in choke from 2936-40 ft.

Henderson Coquat's Lopez 1, Sec. 455, 7 miles northeast Bruni, Duval County, swabbed 100 bbls day of 20-gr oil; will pump to open field, Cole sand 1693-1705 ft, perf 1697-1703 ft.

Sun's Jones 1, Abajo grant, 30 mi northeast Rio Grande City, Jim Hogg County, plugged back from 6009 to 4264 ft, set 5½-in casing and will perf gas sand topped at 4211 ft. Prospect of new field on 44,000-acre lease.

Argo Oil Corp.'s Edrington 3-1, S. Campana, McMullen County, completed as gas well from Government Wells sand topped at 2554 and perf 2559-61 ft; first in field from this sand.

Texas Gulf Coast

Three Coast Wildcats Indicate New Fields

New field indicated in Stowell area, Jefferson County; Cockfield sand in Montgomery County shows for production; Wilcox wildcat in Wharton County making production tests.

Jefferson County: Glenn H. McCarthy's Crawford 1, Stowell area, touched off lease and royalty buying after well reported oil sands in top of Marginulina and Frio. A drill-stem test around 8865 ft recovered four stands oil, no water. Casing has been set for production test. Area has two deep dry holes. Reports credit well with 26 ft sand in Marginulina at 8580 ft.

Montgomery County: Atlantic is retesting Foster Lumber Co. 1, Fostoria area, in Cockfield after failing in Wilcox. Drilled to 11,794 ft and flow tests made in deeper Wilcox, well was plugged back to 5810 ft and perforated 5790-94 ft. It flowed 45-gravity oil and wash water. Later well flowed at rate of 14 barrels oil and 3 barrels salt water hourly through ¼-in choke. Perforations were squeezed for second test.

Stanolind & Amerada's McWhorter 1, Lake Creek area, drilling 11,298 ft sand and shale after drill-stem test failed. Glenn H. McCarthy's Tucker 1, southwest Magnolia field, has set surface pipe, Wilcox test.

Wharton County: Wynn Crosby Drilling Co.'s Poole 1, Lissie area, perforated 10,622-656 ft in Wilcox. Flowed gas and distillate under 1800 pounds pressure. Well stopped flowing and perforations were squeezed for new test, probably around 9620 ft.

Louisiana Gulf Coast

Gas Field Assured On Lewisburg Prospect

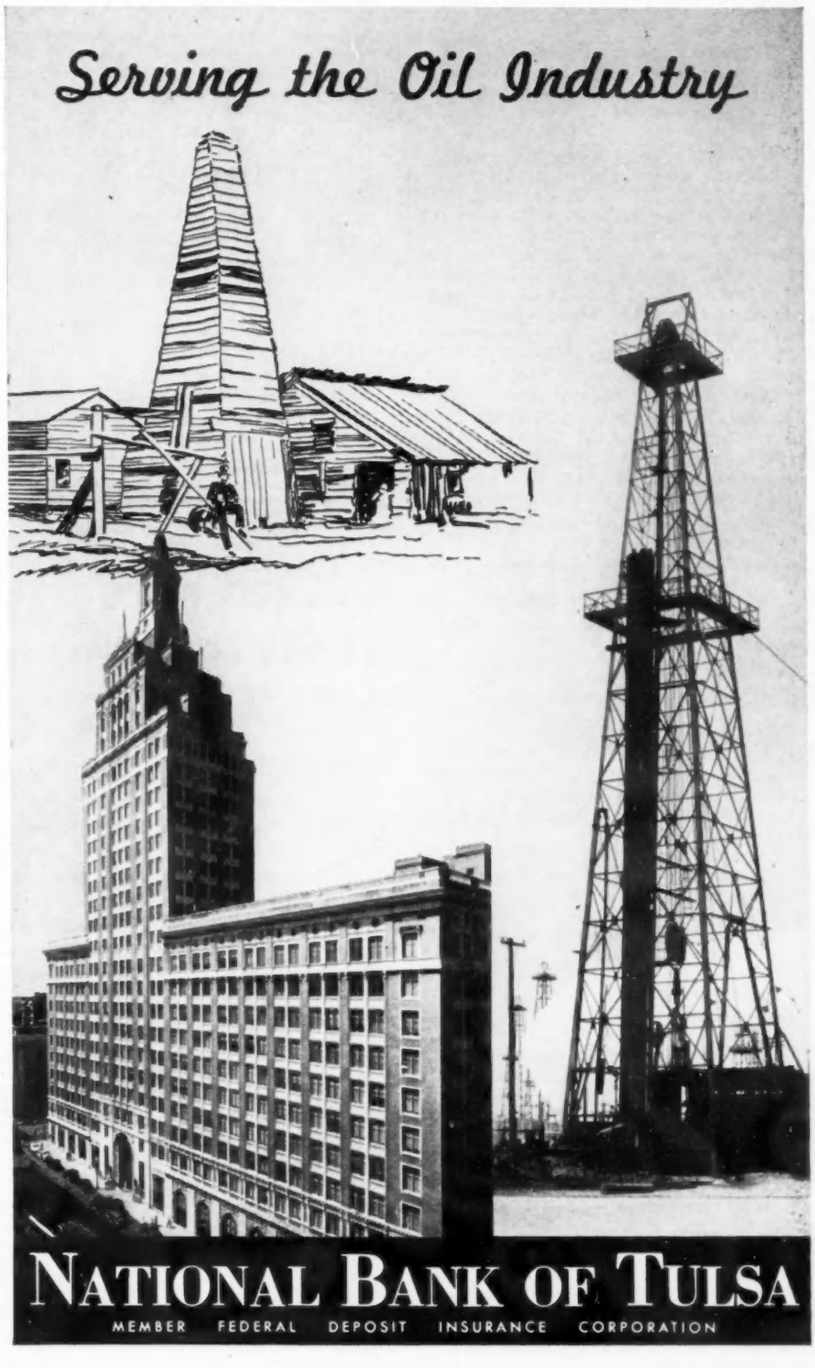
New gas field assured in Acadia Parish as production test scheduled; deep wildcat in Jefferson Davis Parish drilling.

Acadia Parish: Stanolind's Tweedel 1, Lewisburg area, is preparing to make a production test after logging gas sands at 9700 ft and 10,150 ft. Pipe is cemented at 10,206 ft, total depth. Lower section will be tested first, both zones said to correspond with sands found at South Elton.

Jefferson Davis Parish: Cities Service's Lacassine Land 1, 4 miles north Lakeside gas-distillate field, is drilling "tight" hole below 9810 ft. Number of cores were taken around 9000 ft.

Cameron Parish: Phillips has set pipe in Miami 2, one mile north of Chenier Ridge discovery. Electric log was run to 10,178, total depth. A producer would provide major extension, Miami 1 having been completed at 10,194-200 ft in September 1940, for 129 barrels 45-gravity oil and 300 barrels water.

Deep Wells: Gulf's Calcasieu National 2, Hayes prospect, Calcasieu Parish, is below 11,848 ft in shale. Union Oil Co.'s Gray 1, Bayou Guy prospect, Calcasieu Parish, is below 9548 after taking cores. Superior's Paggi 1, Lakeside area, Cameron Parish, is drilling below 10,754 ft.



North Louisiana

Another Wilcox Field Opened in Catahoula

New Wilcox field opened in Catahoula Parish; Tensas Parish wildcat shows oil in Wilcox but drills ahead; North Lisbon Smackover-lime test fails to pick up that formation; Lower Marine test at Shreveport has gas show.

Catahoula: Carter Oil Co. and Phillips Petroleum Co.'s Cotton-Womack 1 (formerly Roy L. Fisher's), NE 12-6n-6e, Catahoula Parish, was flowing 15 bbls hour of 36.5-gravity oil from Wilcox after perforations at 5533-37 ft; 5/32-in choke, tubing pressure 650, casing 800 pounds; bottom 6810 ft. Well settled to 10 bbls hour.

Tensas Parish: Carter Oil Co.'s Rhodes 1, NWc 29-9n-10e, Tensas Parish, showed one stand oil-cut mud and two stands mud in drill-stem test 3394-99 ft, total depth 3406 ft, top Wilcox 3394 ft, and drills ahead.

Lisbon: Union Producing Co.'s McDonald 1, SE SE 13-21n-5w, second 10,000-ft Smackover-lime test in North Lisbon, Claiborne Parish, is more than 600 ft low on top of Smackover lime, not yet topped. Same company's Meadows A-1, C NE 18-21n-4w, completed as North Louisiana's first Smackover lime commercial well and producing gas distillate at 10,395 ft, drilling 10,935 ft.

Shreveport: R. E. Allison's Ellerbe 11, SW SE 27-18n-14w, Caddo Parish, first Shreveport field Lower Marine test, logged gas in core 8540-64 ft, just under cap rock but now drilling ahead after next core showed hard sand. Top Lower Marine 8065 ft.

Arkansas

Shallow Ouachita Wildcat Makes 45 Barrels Daily

Two locations staked newly opened Mount Holly field, Union County; Second tests starts at Big Creek, discovered two years ago but since inactive; Ouachita County shallow wildcat is producer.

Mount Holly: Two locations staked at Mount Holly, Union County, where Smackover lime wildcat recently completed as oil well in Smackover lime.

Macedonia: The sixth gas-distillate producer at Macedonia, Columbia County, producing from Smackover lime completed last week on south side of field, Atlantic Refining Co.'s Souter-Whitlow 1, SE SE 21-18-21, flowing 251 bbls in 24 hours through 15/64-in choke, 8955 ft.

Big Creek: Big Creek gas-distillate field, Columbia County, discovered in December, 1939, and which has hitherto not had any additional drilling received second test when J. W. Love Stager 1, C NE 9-17-21, started rigging. South of Carter's discovery well whose gas has been used for repressuring wells in Buckner field.

Dorcheat: Delta Drilling Co.'s Hunt 1, NE NW 11-18-22, like several previous tests in that field, logged oil show in Lower Marine showing 300 ft 43-gr oil and 100 ft oil-cut mud in drill-stem test at 6957 ft and is drilling ahead.

Wildcat: Lee Bergman's Cook 3, NW NW SW 27-15-18, Ouachita County wildcat, was completed at 1619 ft in Nacatoch sand, 45 bbls of oil daily.

Barnsdall Oil Co.'s Bond 1, SW SW 11-15-24, LaFayette County, drilling "tight" was reported to have logged an oil showing around 3500 ft in Paluxy but is drilling ahead for Smackover lime.

Michigan

Record Well and Record Starts During Week

Fifty-seven permits for the week set a new all-time high, breaking the old mark of 50 established during the Grand Rapids 1700-ft boom in 1939. Reed City's 3600-ft play accounted for 13 starts and shallow gas plays, 1300 ft, in Clare and Osceola counties accounted for 13.

Reed City: Pure Oil Co.'s Mitchell 4, C S½ NW NW 30-18n-10w, flank test in a comparatively low producing area of the field, may have set all-time Michigan initial flow record with 715 bbls in 1:15 minutes from Monroe at 3615 ft. Ohio-Weber's Clark 1, SW SE NE 30-18n-10w, in same field, completed July 4 this year, had estimated 700 bbls hr rating. Recognized all-time potential in Michigan was made by Davis Oil Co.'s Neitzke 6, SW NE NW 21-13n-1w, Porter field, Midland County, June 19, 1934. On a 3-hour run it gauged 460, 570 and 608 bbls hr respectively and was potentialed at 14,597 bbls day.

Reed City wells are not officially tested. With a rate of 200 bbls per well per day most wells are pinched after first 30 minutes to 2 hrs open for clean out, so potentials are highly variable.

Deep Tests: Continental Oil Co. awarded contract to Parker Drilling Co. of Tulsa for a 5000-ft St. Peter test on Turner 1, NE SE NE 15-3s-4w, Calhoun County, with rotary rig now moving in. Continental has blocked several thousand acres in southern Michigan and carried on a combination core drilling and geophysical campaign for past 12 months. Parker will move from Gulf's Bateson 1, Section 2-14n-4e, Bay County, a 10,447 ft St. Peter sand test, to Continental's location.

Wildcats: Sun Oil Co.'s Bauman 1, Section 29-24n-1w, Roscommon County, cased and cemented at 4160 ft was flowing and swabbing 36 bbls oil day at 4188 ft and drilling deeper with indications of pool opener in Monroe lime.

H. J. Hirzel's Oxendale 1, Section 36-18n-5w, Clare County, flowing by heads 100 to 200 bbls oil from Dundee at 3941 ft and still producing without benefit of a long string, already has drawn two rigs and five other locations.

Small Gas Line

Continental Oil Company is planning a 12-mile gas line from its Leninger 1, SW SW 17-15n-3w, Logan County, Oklahoma, to connect with its Edmond field gasoline plant. Although essentially a gas well, Leninger 1 also produces a spray of oil. Hearing before Oklahoma Corporation Commission was scheduled for November 28.

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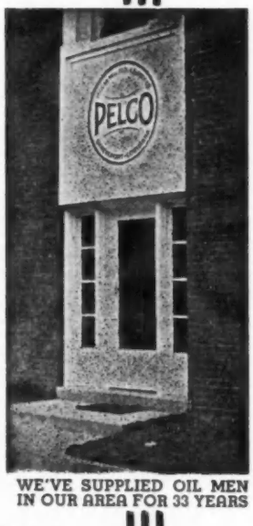
What a thrill the mails are these days! Just as you think you're catching up with government reports and beginning to see a ray of light through the priority smoke screen, along comes something new from Washington. We've almost learned to like it—in the sense that a man inured to a boiler factory might miss the racket. So don't mind us. Our right hand of procurement is not allowed to know how completely red tape ensnares our left hand. Try PELCO first—we might have it!



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Fresno County Test Has Shows in Eocene

Slight gas show in Alameda County test; Fresno County test finds Eocene pay; Kern County deep test outlook dubious; old Los Angeles County test being readied for deepening.

Alameda County: In the Altamount area in Alameda County, near San Francisco Bay, Shell Oil Co.'s Nissen 1 wildcat made a slight gas blow on formation test, recovery consisting of 1305 ft of gas-cut mud, from interval 6259 ft to bottom at 6563 ft.

Fresno County: Amerada Petroleum Corp. has bottomed Lawton 45-26 wildcat in 26-17-19, Riverdale area, at 8311 ft in sand and siltstone; showings in the Tamblor and Eocene, with oil showings near 6430, 6700, 6900 and 7900 ft will be tested by stages.

Kern County: Final conclusions reached by North American Oil Consolidated after taking W. P. 1-28 deep test in the Midway-Sunset field, to 9343 ft are that there is fair prospects for making commercial production from interval 8849-9260 ft where 40 ft of oil sand was logged. Four formation tests were made of interval 8849-9260 ft, all of which were inconclusive. Top of Lower Miocene was placed at 8400 ft and top of Cibicides Americanus at 9750 ft, the latter on ditch samples.

Los Angeles County: Universal Consolidated Oil Co. has taken over the Ward property in 27-3-16, Aliso Canyon area, and is preparing to deepen the old Standard Oil Co. Ward 1 test in that section which was bottomed at 6909 ft. New operator will deepen in attempt to pick up lower zone encountered by Tide Water Associated in Porter 12 in this area.

New Mexico

Eastern Eddy County Strike Installing Pump

Eastern Eddy County has new oil pool, and semi-wildcat logs first oil show. More development in store for southwest edge Lovington pool, Lea County.

Eddy County: P. B. English et al's Jones 1, C SE NE 24-19s-31e, south of Shugart pool, filled 1500 ft with oil in 48 hours from sand 2461-70 ft; elevation 3554 ft. Installing temporary unit to make pumping test before running oil string. Sanders Bros.' Evans 1, C SW NE 4-17s-30e, southwest outpost of new area recently opened by operators, entered oil saturation 2837 ft, drilling 2840 ft.

Lea County: Amerada's State 7-L-A, C NW SW 1-17s-36e, flowed 225 bbls initial on ½-in choke, used 3000 gallons acid at 4946 ft; southwest edge Lovington pool, and will likely induce company to drill remaining location on tract.

Nebraska

Barada Pool's Fourth Well Shows for Oiler

Fourth well for Barada pool shows for good producer; ready to test new Falls City oiler and deepen old test.

Richardson County: Skelly Oil Co.'s Steimbrink 1, C E½ SE NW 36-3n-16e, topped Hunton lime 2450 ft, drilled in to 2462 ft, swabbed 40 bbls oil in 1 hr on preliminary test.

Operators' Roesch 4, C W½ NE SW Sec. 36, moging in tools; operators' Merz 1, C E½ NE NE Sec 36, drilling 1960 ft.

Ohio Oil Co.'s Bucholz 9, SE NE SW 17-1n-16e, Falls City pool, topped Hunton lime at 2228 ft, set 7-inch csg and was waiting. Operators' Bucholz 10, NWc SW Sec. 17, drilling 1220 ft; operators' Sandrock 1, NW SE NW Sec. 20, old well deepened, drilling cement plugs.

Carbon Black Plant Will Consume Hugoton Gas

Permit of authority for construction of a $300,000 carbon black plant near the Hugoton gas field in Southwestern Kansas has been issued by the Kansas Corporation Commission to Glen M. Dunne, Wichita, and C. W. Hoffman, Eastland, Texas.

Construction of the plant will provide a market for gas in an area where many land and lease owners have been unable to obtain pipe line connections.

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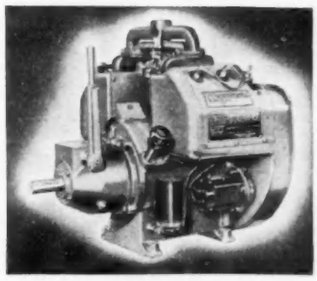

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UNITED STATES WELL COMPLETIONS

Arkansas

Columbia County (Macedonia)—

Company, Well and Location	Init. Prod. Bbls.	Depth
Atlantic, Souter-Whitlow 1, 21-18-21	251	8955

Ouachita County (Wildcat)—

Lee Bergman, A. Cook 3, 27-15-18..	50	1619

Union County (Urbana)—

Roberts & Murphy, Parker 1, 3-18-		

California

Fresno County (East Coalinga Eocene)—

Standard, No. 32-31B	2369	8200

Kern County (Buena Vista Hills)—

Honolulu Oil Corp., (PD 2656)	¶5	14662

Kern County (Coles Levee)—

Richfield, KCL 1-G-29	¶9	5540

Kern County (Edison)—

Monterey Explo. Corp., Shell-Duff 16	40	1769

Kern County (Elk Hills)—

Standard, Tupman 230	63	3133

Kern County (Kern River)—

East Puente Oil Co., No. 5	No. Est.	932

Kern County (Midway-Maricopa)—

Marvic Assoc., No. 2	20	1223

Kern County (Mount Poso)—

Bradford Bishop, No. 1	100	1433
Shell, Security 36	29	1973

Kern County (Union Avenue Area)—

Hancock, Roberts 3	5	4241

Los Angeles County (Del Valle)—

R. E. Havenstrite, Lincoln 8 (PD 6020)	232	6104

Los Angeles County (Inglewood)—

Tide Water, Vickers 72	474	8320

Los Angeles County (Long Beach)—

Shell, Cresson 17	24	2625

Los Angeles County (Montebello)—

Brookner Oil Co., No. 1	•	4191

Los Angeles County (Potrero)—

Basin Oil Co., Potrero 11	120	3899

Los Angeles County (Wilmington)—

MAK Petroleum Corp., No. 7	180	3750

Santa Barbara County (Santa Maria Valley)—

Pacific Western Oil Co., Hobbs 7..	450	4822
Union, Bradley Lands 2-2	120	4595

Tulare County (Trico Gas Field)—

Trico Oil & Gas Co., Saymour-Bolz 1	¶24	2469

•Failures; †Junked; ¶Million cu. ft. gas.

Ventura County (Cat Canyon)—

Standard, Los Flores 3	866	6100

Ventura County (Ventura Avenue)—

British-American Oil Prod. Co., Hartmann 12	400	10325
Tide Water, VL&W 49	3899	10425

Illinois

Clay County—

J. Hausemann, Mautz 1, nw ne nw 27-5n-4w	•	601
Longhorn Oil et al, Harmon 1, w½ nw sw 36-5n-7e	•	3039

Clinton County—

Sistler et al, Phoenis 3, se nw sw 14-1n-1w	100	1447
McCullough et al, Coe 5, sw se sw 14-1n-1w	•	1459
Darnell, Beckmeyer 1, c se nw sw 25-3n-3w	•	1080

Coles County—

Eastern Ill., Halleck 1, se se sw 20-13n-14w	•	722
A. M. Meyers, Ashmore 1, se nw sw 28-13n-14w	•	455

Edwards County—

Superior, Fewkes 4, ne nw sw 7-2s-11e	131	3201
W. W. Gray, Fee "A" 23 se sw nw 14-3s-14w	117	2534
Mabee Drlg. Co., Smith 1, nw nw se 7-3s-10e	•	3092
Ohio, Stremme 1, e½ ne ne 31-2n-14w	2978	3165

Fayette County—

Carter Oil, Blankenship 3-D, c nw se 28-8n-3e	250	3075

Gallatin County—

Hiawatha O&G Co., Stinson 9, sw ne ne 19-7s-11e	40	2458

Hamilton County—

Texas Co., Poorman "B" 1, ne ne se 24-3s-7e	74	3258
Johnson 10, ne ne ne 13-6s-6e	166	3093
Mid-Sun Oil Corp., Hoffman 1, n½ ne nw 22-5s-5e	•	3527
Shell, Ventress 3, se se sw 12-6s-5e	1000	3329
Kewanee O&G Co., Flannigan 3, ne sw ne 14-6s-5e	411	3325
Morlan 2, se nw se 14-6s-5e	516	3410
Gulf, Morlan 2, se nw se 14-6s-5e	516	3410

Jackson County—

E. S. Adkins, Parrish 1, ne nw sw 9-7s-1w	•	2873

Jasper County—

Pure, Rotramel 2, w½ se se 8-5n-10e	350	2830
Parnell 2, w½ se ne 18-5n-10e	320	2860
Boos "A", c e½ ne se 29-6n-10e	•	2879

Jefferson County—

Gulf, Maschoff 1, sw se sw 10-1s-1w	Wtr. Dspl.	1100
A. A. Cameron, Schultz 1, ne sw nw 35-2s-1e	181	1978
Magnolia, Kaminski Est. 4, sw ne se 2-3s-1e	194	1965

Lawrence County—

Chet Everett, Spiedel 1-A, nw ne nw 26-2n-12w	86	1405

Marion County—

Highlands Oil, Highlands Co. 2, ne nw sw 35-4n-1e	42	1372
Doran & Buttram, Morgan 1, se nw ne 12-4n-2e	•	2240

Perry County—

Blankenship et al, George 1, nw ne sw 23-4s-1w	•	1614

Richland County—

Pure, Velt 3, ne sw sw 23-4n-9e	69	2619

Wabash County—

Arthur Mulbach, Litherland 1, se sw sw 5-1n-12w	5	1572
Harry Fotiades, Mason 1, c sw se nw 27-1n-12w	170	2316

Washington County—

Schachtsiek, Newton 1, nw ne ne 4-4s-4w	•	451

Wayne County—

Carter, Lowe 1, ne nw nw 3-1s-6e	215	3223
Lowe 2, sw c ne ne ne 4-1s-6e	992	3225
Gulf, Shehorn "B" 1, nw ne se nw 3-1s-6e	84	3232
Texas Co., Poorman 15, ne se nw 30-3s-8e	467	3238
Turner 1, s½ ne sw 28-1n-6e	•	3250
United Prod. Co., Hale "A" 2, n½ nw sw 22-1n-6e	1000	3250
Cariens 5, s½ nw sw 35-1n-6e	500	3230
Shell, Clsne State Bank 3, n½ se se 22-1n-6e	378	3244
Galbraith 2, n½ se sw 22-1n-6e	319	3221
Porter 1, e½ nw se 36-1n-6e	193	3277
Jablonski, Bratton 3, n½ se se 26-1n-6e	1185	3163
Pearl Morris et al, Rogers-LeCroy 1, n½ ne sw 26-1n-6e	150	3197
Wiser Oil Co., Dickey "B" 5, s½ se se 34-1n-6e	526	3216
H. States 3, e½ se sw 36-1n-6e	186	3276
E. J. Ruwaldt, Cariens 6, sw se nw 35-1n-6e	300	3018

Summary of Drilling Operations in the United States, Week Ended December 6, 1941

	WELLS COMPLETED								PERMITS FOR NEW WELLS[1]				
		New Wells Drilled for Oil and Gas											
	Total for Week	Oil Wells	Gas Wells	Failures	Miscellaneous[3]	Initial Production	Total 1941	Total this Date 1940	This Week	Total this Month	Total 1941	Total this Date 1940	Year Total 1940
Alabama	.....	.....	.....	.....	.....	.....	5	9	.....	.....	.....	.....	.....
Arkansas	3	2	1	.....	.....	301	182	176	3	3	176	141	153
California	22	19	3	.....	.....	9,391	1,119	1,043	25	25	1,119	1,051	1,042
Colorado	.....	.....	.....	.....	.....	.....	18	10	.....	.....	.....	.....	.....
Florida	.....	.....	.....	.....	.....	.....	1	2	.....	.....	.....	.....	.....
Georgia	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
Illinois	68	50	.....	14	4	16,687	3,745	3,769	90	90	4,477	4,339	4,532
Indiana	8	4	2	2	.....	151	508	500	19	19	[2]295	.....	.....
Iowa	.....	.....	.....	.....	.....	.....	6	1	.....	.....	.....	.....	.....
Kansas	44	27	3	9	5	41,956	2,112	1,889	55	55	2,219	1,943	2,048
Kentucky	11	10	.....	1	.....	226	318	350	9	9	[2]196	.....	.....
Louisiana	30	21	1	8	.....	3,855	1,472	1,615	44	44	1,659	1,609	1,658
Michigan	11	6	1	4	.....	15,270	805	1,145	57	57	953	1,061	1,093
Mississippi	.....	.....	.....	.....	.....	.....	192	180	.....	.....	.....	.....	.....
[1]Missouri	1	.....	.....	1	.....	.....	65	30	.....	.....	9	25	26
Montana	.....	.....	.....	.....	.....	.....	211	188	.....	.....	.....	.....	.....
[1]Nebraska	.....	.....	.....	.....	.....	.....	87	43	.....	.....	95	64	69
New Mexico	9	8	.....	.....	1	2,387	377	599	4	4	382	536	559
New York	35	17	.....	.....	18	122	1,018	928	.....	.....	.....	.....	.....
Ohio	36	11	8	15	2	218	1,682	1,044	.....	.....	.....	.....	.....
Oklahoma	41	24	2	13	2	4,515	2,029	2,018	53	53	2,217	1,780	1,888
Pennsylvania	72	43	11	2	16	56	3,522	3,184	.....	.....	.....	.....	.....
South Dakota	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....
Tennessee	.....	.....	.....	.....	.....	.....	16	11	.....	.....	.....	.....	.....
Texas	176	128	4	37	7	72,550	9,813	9,315	214	214	11,462	10,459	11,170
Utah	.....	.....	.....	.....	.....	.....	3	3	.....	.....	.....	.....	.....
West Virginia	19	6	12	1	.....	33	712	594	.....	.....	163	747	782
Wyoming	.....	.....	.....	.....	.....	.....	123	150	.....	.....	.....	1	1
Total this week	586	376	48	107	55	167,718	30,142	28,796	573	573	25,422	23,749	25,021
Total last week	635	388	58	134	55	144,297	29,556	28,276	544	2,068	24,849	23,333	25,021
Total this year	30,142	18,412	2,385	6,568	2,777	8,289,634	.....	.....	.....	.....	.....	.....	.....

[1] This tabulation includes those states where weekly data are available; figures for Missouri date from August 10, 1940; Nebraska from August 3, 1940.
[2] No data available before June 14, 1941.
[3] Includes old wells deepened, water-intake, gas input, and salt water disposal wells.

United States Well Completions—*Continued*

Company, Well and Location | Init. Prod. Bbls. | Depth

Pure Oil, Chaffin "B" 4, s½ se ne 19-2n-8e 14 2662
Hosselton "B" 4, s½ sw ne 31-2n-8e 357 3030
White County—
Longhorn, Helm 21, se sw se 22-3s-14w 150 2777
Texas Co., Poorman 14, se se nw 30-3s-8e 330 3228
Mabee O&G, Smith 8, nw sw se 4-4s-14w 25 2832
Mabee Drlg. Co., Hon 1, nw nw ne 9-4s-14w 105 2747
Superior, Fitton 32, sw se nw 23-4s-14w 130 2879
Greathouse "A" 2, sw ne sw 34-4s-14w 130 2901
Ford et al 17, nw nw sw 4-5s-14w 60 2941
Tidewater, Bacon 4, se se ne 5-5s-14w 145 2204
Cities Service, Mount 4, c e½ e½ ne 11-7s-8e 343 2171
Fisher Oil Co., Welch 1, sw sw sw 11-7s-8e 65 2931
Kingwood & Sinclair, Martin 3, ne nw nw 13-7s-8e 158 2895
Carter, McGill 1, ne ne ne 15-7s-8e 85 2968
McGill 2, c se ne ne 15-7s-8e.... 150 2960

OLD WELLS DEEPENED

Marion County—
Magnolia, Young 101, ne nw nw 28-2n-2e (otd 3505) 64 4687
Randolph County—
J. Bedell et al, Hoyer 1, se nw sw 4-5s-6w (otd 420) ..... * 506
White County—
Superior, Ford 11, ne se sw 4-5s-14w (otd 2260) 165 2947

Indiana

Gibson County—
Hall Edwards, Rec., Maier 45, ne se sw 11-3s-14w ..... * 2557
Maier 5-B, se se ne 14-3s-14w.... 50 2139
Continental, Keck 30, ne nw se 27-3s-14w 68 2594
Harrison County—
Harrison, Harrison Dev. 2, se ne ne 5-4s-4e ..... * 740
Jay County—
Dixon et al, Fee 1, ne sw nw 24-22n-13e .....¶025 1005
Portland Forge, Fee 1, nw se nw 16-23n-14e .....¶050 1005
Pike County—
Ohio Oil, Gladish 15, se se sw 31-1n-8w 12 1573
Posey County—
Central States, Seifert "C" 3, nw sw nw 30-6s-12w..... 21 1097

Kansas

Barton County—
Gulf, Lambert 1, ne nw ne 17-16s-12w 275 2885
Continental, Redetzke 1, se se ne 29-16s-13w 271 3388
Skelly, Disque 3, c s½ se ne 9-17s-11w ..... * 3360
Virginia, Selle 2, c s½ sw sw 17-20s-11w 3000 3290
C. E. Ash, Schlessinger 1, c e½ ne ne 13-20s-12w ..... * 3454
Helmerich & Payne, Unruh 1, c w½ sw nw 17-20s-15w 583 3874
Butler County—
Wilson Oil, Wilson 3, c w½ nw nw 12-25s-3e 150 2678
Cowley County—
Leader-Zephyr, Elliott 1, se ne se 17-32s-5e 522 3048
Sinclair Prairie, Shurtz 2, ne nw ne 29-34s-3e 297 3395
Ellis County—
Sinclair Prairie, Slimmer 3, nw sw sw 19-11s-16w (pb 3384).....3000 3405
Ellsworth County—
Magnolia, Skalicky 3, c e½ se nw 9-16s-10w 3000 3286
Graham County—
Cities Service, Montgomery 1, se se nw 7-8s-23w 71 4018
Greenwood County—
Shaffer & Howell, Schneider 23, se c nw nw 15-23s-13e..... 15 1602
K. T. Weideman, Lewis "A" 11, ne sw sw 25-27s-8e..... ¶44 1740
Lemon & Shumaker, Mitchell 1, nw sw se 17-28s-11e ..... * 1215
Jefferson County—
Hatcher & Fisk, Kimmel 1, c ne nw 5-10s-20e ..... ¶5 1526
McLaughlin et al, McLeod 1, nw ne nw 8-10s-20e .....¶17.3 1571
Marion County—
Veeder Supply, Jones 2, c s½ ne nw 26-17s-4e 353 2392
Pawnee County—
Derby, Bixby 1, c s½ sw nw 24-20s-16w 62 3817
Reno County—
Cities Service, Kreie "C" 2, sw ne se 21-23s-10w 3000 3779
Kreie "D" 1, ne ne sw 21-23s-10w.3000 3767
Republic, Snowberger 4, sw nw ne 21-23s-10w (pb 3779)..... * 3809
Simpson Oil, Paine 1, sw nw ne 5-24s-10w (pb 3842) ..... * 3849
Landon, Union Central Life Ins. 6, c w½ se sw 7-24s-10w.....3000 3766
Dines et al, Hunter 4, c e½ ne nw 18-24s-10w ..... * 3799
Rice County—
Continental, Gray 4, nw sw sw 19-18s-7w 3000 3171
Gum 5, c e½ sw se 34-19s-10w.. 506 3309
I. W. Murfin, Wright 1, c e½ ne nw 7-19s-7w ..... * 3458
Derby et al, McGlynn 1, c e½ se nw 21-20s-9w (otd 3290)..... * 3298
Hall & Branine, Burns 1, c n½ nw sw 15-20s-10w 3000 3376
H. B. Garden, Engelland 1, nw nw ne 13-21s-7w ..... * 3470
Rooks County—
Adam Clink, Church Lot 1, sw c sw 11-9s-16w 116 3298
Russell County—
Cummings & Aliadin, Billings 1, c w½ sw sw 31-14s-14w 356 3174
Transwestern, Polcyn 6, c s½ sw nw 14-14s-15w 1520 3211
Carter Oil, Detrich 15, 75 ft n sw sw se 8-15s-13w 1075 2977
Stafford County—
Cities Service, Knoche 2, nw ne se 28-23s-12w 3000 3840
Landon et al, Volker 4, c s½ nw sw 1-24s-11w 75 3747
Deep Rock, Crust 1, c e½ se se 4-24s-11w 2400 3764
Gulf, Figger 2, ne se se se 9-24s-11w 273 3829

OLD WELLS DEEPENED

Greenwood County—
K. T. Weideman, Lewis "A" 7, ne ne sw 25-27s-8e (otd 2551) (pb 2534) 45 2761
McPherson County—
Westgate-Greenland, Henne 1, nw se sw 18-17s-1w (otd 2676) (pb 2708) 37½ 3360
Rice County—
Derby & Lario, McGlynn 1, c e½ se nw 21-20s-9w (otd 3290)..... * 3298
Russell County—
Polcyn et al, Fee 2, se sw se 10-14s-15w (otd 3059) 3000 3269
Stafford County—
Stanolind, Sims 1, sw sw ne 11-24s-11w (otd 3756).....3000 3795

Kentucky

Breckenridge County—
Harry Ogle et al, Renfroe 2, 23-N-35 ..... 10 334
Daviess County—
Cumberland Pet., Ivey 15, 2-N-31 * 612
Ivey 16, 2-N-31..... 3 615
C. E. Daugherty, Ashley 3(7), 15-N-31 ..... 5 708
Ellis Massey, Mosely 5, 25-N-31.. 35 900
H. C. Farmer, Weaver 7, 19-N-29 10 1202
Hancock County—
Frank Randall et al, Burdette 3(8), 12-O-33 ..... 25 607
Henderson County—
Schneider & Gwin, Moss 3, 25-O-25 3 720
McLean County—
H. C. Farmer et al, Livermore Timber Co. 5, 8-L-29..... 10 1129
Ohio County—
Likens et al, Lewis 7, 10-M-32.... 10 474
Union County—
Sun Oil et al, Reyburn 2, 20 O-18.. 115 1342

South Louisiana

Cameron Parish (Cameron Meadows)—
Burton-Sutton, School Board 2-B.. * 4804
Cameron Parish (Chalkley)—
Shell, Hanszen 9..... 288 8923
Evangeline Parish (Ville Platte)—
Oil Incomes (Lilly), Ortego 2..... 276 10118
Iberville Parish (St. Gabriel)—
Shell, Gueymard 7 ..... 291 8670
Titanic, Gueymard 4-B..... 222 8653
LaFourche Parish (Golden Meadow)—
Texas Co., LLE-Golden Meadow 24 * 6525
LLE-State Catfish Lake 15..... 88 2810
LaFourche Parish (Wildcat)—
Texas Co., LaFourche Basin Lev. Dist. 1-A ..... ¶ 11497
LaFourche Parish (Chacahoula)—
Sun, Dibert-Stark-Brown 11..... 214 7427
Acadia Parish (North Crowley)—
Humble, Reiners 7..... 398 9060
Rapides Parish (Wildcat)—
Placid Oil, Bentley Lbr. Co. 1... * 6321
St. Martin Parish (Anse la Butte)—
Stanolind, Bergeron 6..... 170 4720
Guidry 1-A ..... * 5004
St. Mary Parish (Wildcat)—
Texas Co., State-Cote Blanche Isle 1 * 9239
Terrebonne Parish (Gibson)—
Shell & Barnsdall, Realty Operators 1-A 265 9375

North Louisiana

Caddo Parish (Pine Island-Vivian)—
A. P. Gilbert, Gray 1, 34-22n-16w.. 200 2460
L. M. Calhoun, Jr., Stiles A-1, 33-21n-16w 35 960
Caddo Parish (Pine Island)—
Gary & Gibson, Muslow 5, 6-20n-15w 45 1510
Stanolind, Dillon 144, 13-21n-15w.. 140 1635
Dillon 145, 13-21n-15w 150 1630
Catahoula Parish (Wildcat)—
Roy L. Fisher, Womack-Cotton 1, 12-6n-6e 240 6810
LaSalle Parish (Little Creek)—
H. L. Hunt, Tannehill & Gallagher 8, 31-9n-2e 158 3185
LaSalle Parish (Nebo-Jena)—
H. L. Hunt, Goodpine, C-6, 29-8n-3e * 5060
Goodpine A-36, 15-7n-3e..... * 4281
Carnahan 1, 39-7n-3e..... 125 4062
Placid Oil Co., Couch 4, 29-8n-3e.. 150 3880
Gray 3, 38-7n-3e..... 135 4080
Berkshire Oil Co., Yule Community 1, 40-7n-3e 130 4100
Hassie Hunt, C. B. Walker 1, 38-7n-3e 135 4080
LaSalle Parish (Olla)—
Placid Oil Co., Louisiana Central 117, 6-10n-3e ..... * 2740

Michigan

Allegan County—
Ide & Atha, Wilkins 1, sw sw nw 17-3n-12w ..... * 1561
Arenac County—
W. E. Ross, Vaughn 1, c nw 17-19n-4e ..... * 1590
Bay County—
Chapman Oil Co., Reichsteiner 3, nw se ne 3-14n-4e..... 420 2920
Isabella County—
Guy Obenauer, Lueder 2, sw nw se 13-14n-6w ..... ¶¾ 1362
Kent County—
H. C. William, Murray 1, se nw nw 29-7n-12w 35 1938
Midland County—
Michigan Devonian, Wolverine 1, c w½ sw sw 16n-1w..... * 3980
Muskegon County—
Jacob Bolema, Whitlock 1, c e½ ne sw 34-10n-15w..... * 2300
Osceola County—
Pure, Mitchell 4, c s½ nw nw 30-18n-10w 11,360 3619
Roscommon County—
Ohio, State A-1, c n½ ne se 33-21n-3w 920 3350
Ohio and Hilliard, State 1, c s½ nw se 34-21n-3w 2500 3449
Van Buren County—
Clapsaddle, Albright 1, nw se sw 12-1s-14w 35 1289

Missouri

Buchanan County—
Ohio, Meek 1, c s½ s½ n½ 29-55n-35w 2344

New Mexico

Eddy County—
Franklin Pet. Co., Coppedge 4-A, nwc ne 5-18s-30e 48 2885
Morton-Elders et al, Root 2, nw se nw 7-17s-30e 245 2768
Lea County (Maljamar)—
A. H. Hover et al, State 5, c se ne 32-17s-32e 952 4150
Lea County (Mattix)—
Amerada, Hodges 1, c ne se 8-24s-37e 73 3586
Western Gas Co., Bates 1, c ne nw 18-24s-37e 264 3572
Lea County (Salt Lake)—
H. W. Leonard et al, State 3, c ne nw 18-20s-33e 110 3100
Lea County (Vacuum)—
Phillips, State-Santa Fe 46, c n½ ne nw 4-18s-35e 96 4600
State-Santa Fe 47, nw ne nw 35-17s-35e 84 4596

OLD WELL DEEPENED

Lea County (Monument)—
B. H. Nolen et al, Cooper 2, nwc 3-20s-37e (otd 3808)..... 515 3880

New York

Trio Oil Co., Wetherby farm, Bolivar 12 1383
R. B. Moore et al, Painter farm, Bolivar 8 1353
Producers Oil Corp., "A," Keller-Scott farm, Wirt 7 1042
Brothers Oil Co., Crandall farm, Bolivar 8 1349

[*Continued on next page*]

United States Well Completions—*Continued*

Company, Well and Location	Init. Prod. Bbls.	Depth

NEW YORK—Continued

Star Oil Co., Meff farm, Wirt	7	1332
Helen Randall, Reid farm, Alma	10	1439
Andrews Bros. Oil Co., Minnum farm, Alma	7	1459
Harder-Mitchell et al, Bradley farm, Bolivar	5	1322
Bradley Bros., Inc., Withey farm, Bolivar	8	1372
Quaker Oil Co., Brown farm, Alma	6	1247
H. W. Patterson et al, Ockerman farm, Amity	5	757
Rico Oil Co., Alger farm, Scio	5	870
L. & D. Oil Co., Browning farm, Scio	5	533
Rufus Scott, Scott farm, Bolivar	7	1377
Shaner & Dermitt, Wetherby farm, Bolivar	10	1359
Gray Oil Co., Smith farm, Genesee	5	1411
Willett & Paul Corp., Willetts farm, Genesee	7	1486
Water Intake Wells—		
Messer Oil Corp., Vosburg farm, Bolivar	..	1357
Vosburg farm, Bolivar	..	1360
Bradley Prod. Corp., Sprague farm, Alma	..	1266
N. V. V. Franchot, Murphy farm, Bolivar	..	1437
MacDonell Oil Co., MacDonell farm, Bolivar	..	1352
Star Oil Co., Neff farm, Wirt	..	1348
N. V. V. Franchot, Emerson farm, Scio	..	1288
Curt Oil Co., Williams farm, Alma	..	1378
George Oil Co., Scott farm, Alma	..	1349
Bradley Prod. Corp., Fitz-Carroll farm, Bolivar	..	1418
McEbenwood Oil Co., Lynch farm, Andover	..	1122
L. H. Thornton et al, Fassett farm, Willing	..	1337
South Hill Oil Co., Harrington farm, Wellsville	..	1372
H. W. Patterson et al, Browning farm, Scio	..	624
Stebbins farm, Scio	..	628
Messer Oil Corp., Beever farm, Wellsville	..	956
Wilson Oil Co., Wales farm, Genesee	..	1420
Robert Dermitt, Wetherby farm, Clarksville	..	1328

Ohio

Ashland County—		
Ohio Fuel, Mang 1	¶0.15	2697
Athens County—		
Ohio Fuel, McCune 1	*	1736
Wallace & Sons, Halbirt 1	¶0.1	1415
Belmont County—		
Barnesville Dev. Co., Schneider 1	*	1323
Cuyahoga County—		
East Ohio, Glendenning 1	¶0.23	2562
Harrison County—		
East Ohio, Phillips 1	*	5920
Jefferson County—		
L. L. Sapp, Iddings Heirs 1	*	685
Knox County—		
Upham Gas Co., Conkle 1	*	3139
Allen Willey, Rinehart 1	¶1.05	2745
Licking County—		
Ray Penick, Jones 1	¶0.3	2487
Pat Oil Co., Newlon 1	3	735
Lightner, Fee 4	4	650
Loraine County—		
Edson & Sons, Winckles 1	*	2478
Ohio Fuel, Savings & Loan 1	*	2658
Medina County—		
R. C. Holmes et al, Hostettler 013	5	506
Hostettler 014	5	496
Hostettler 015	5	490
Meigs County—		
New Southern Co., Roush 1	¶0.1	3250
Stumner Gas Co., Roush 4	¶0.1	3090
Ohio Fuel, White 1	*	2194
Monroe County—		
Hines, Gardner 2	12	1493
A. E. Robinson, Nickels 6	5	1198
Baker Oil Co., Baker 13	*	1333
Muskingum County—		
Industrial Gas Corp., Finley et al 2	¶0.2 & 19	4130
Atha Co., Thompson 2	*	3559
Noble County—		
J. T. Gailey, Uldman 9	*	4728
Hayes Bros., Lake 1	*	1075
Perry County—		
B. G. Davis et al, Starkey et al 3	150	2748
Ohio Fuel, Sunday Creek Coal Co. 1	*	1042
Hermey Bros., Hermey 25	7	1028
Summit County—		
H. C. Bishop, Frank 1	¶2.3	4330
Vinton County—		
Henderson Oil Co., Miller 5	*	438
Washington County—		
W. C. Patterson, Wostell 6	2½	1441
Wayne County—		
Peaker & Nohe, Eckard 1	*	787
OLD WELLS DRILLED DEEPER		
Athens County—		
Ohio Fuel, Hill 1	¶0.04	1451
Washington County—		
DePuy Bros., Winland 7	*	1921

Oklahoma

Bryan County—		
Pure, Thomas (203) 2, ne nw ne 28-5s-7e	618	3029
Sinclair Prairie, Irwin 1, sw se se 18-6s-12e	*	2033
Caddo County—		
Ohio Oil, Wade 12, ne sw se 2-5n-9w	450	6052
Carter County—		
Skelly, Miller 5, sw sw ne 5-1s-3w (pb 3136)	94	3343
Comanche County—		
R. E. Cooper et al, Bowen 1, se nw se 29-2n-9w	*	1702
Creek County—		
Stanolind et al, Starr Unit 3, ne ne nw 18-15n-8e	102	3826
R. L. Soper et al, Robins 1A, sw sw nw 8-16n-11e	*	2818
J. F. Upton, Fee 2, ne se ne 4-16n-12e	*	2294
Zephyr Drlg. et al, Emarthlokee 1A, ne nw sw 34-17n-8e	55	2771
Grady County—		
Ray Stephens, Johnson 1, nw ne nw 18-5n-8w	*	4556
Jackson County—		
Harwell & Hill, Guyerman 5, se ne sw 14-1n-20w	50	1505
Lincoln County—		
Big Chief, Barnett 1, c w½ sw ne 20-13n-6e (pb 4250)	¶13	4449
Marshall County—		
Pure, Thompson (107) 2, ne nw ne 33-5s-7e	504	5756
Dennison Oil, Adams 1, ne sw nw ne 6-8s-6e	25	542
McIntosh County—		
McNutt & Young, Love 1, c n l n½ nw 12-12n-16e	*	1950
Okfuskee County—		
Walker et al, Hilderbrand 1, nw ne ne 19-10n-11e	*	1580
J. E. Miller et al, Winslip 1, se se sw 12-11n-8e	*	3509
Oklahoma County—		
Henson, Giles 2, ne c sw 15-11n-3w	333	6556
British American, Military 6, ne se nw sw 34-12n-3w	256	6509
Okmulgee County—		
Wood, McAdoo 3A, 240 ft e of se se ne 28-13n-13e	¶1.5	2017
J. R. Allen, Snakeya 2, nw ne nw nw 25-14n-12e	2	2030
Osage County—		
E. O. Platter, 2, 30 ft s of sw sw se 29-22n-9e	*	2442
Phillips Pet., 1, ne se sw 18-27n-8e	152	2434
Pontotoc County—		
D. B. Saled, Patterson 1, sw c se sw 20-5n-8e	10	900
Pottawatomie County—		
Kerlyn, Bowlby 2, se sw se 9-7n-5e	15	4132
Eagle, School Land "C" 6, 50 ft w of nw nw ne 16-7n-5e	*	2802
Delaney, Simpson 1, se sw se 29-8n-5e	*	4450
Atlantic, Higbee 3, nw se sw 22-9n-4e	264	4622
Nesbett 1, se nw nw 27-9n-4e	353	4689
Darby, Nadeau 2, c ne sw 19-9n-5e	100	4120
Seminole County—		
R. M. Tate, Fleet-Osborn 1A, se sw ne 11-6n-7e	4	1500
Eason & Grisso, Bryant 1, sw ne sw nw 7-6n-8e	25	1268
Devonian, Harrison 1, sw nw ne 4-8n-8e (pb 4043)	241	4308
Sinclair Prairie, Jones 3, se c sw se 15-9n-5e (pb 3441)	38	3700
Stephens County—		
Amerada, Hansen 9, c sw, 12-1s-4w (pb 3523)	13½	4080
Skelly Oil, Nichols 14, nw sw se 36-1s-5w	42	751
Razin Bros., Lowrey "A" 1, sw se ne 6-3s-5w	*	1306
J. M. Johnson, Lowery 1, ne se se 7-3s-5w	4	1168
Elm Oil, Massey 1A, sw nw nw 8-3s-5w	*	1232
OLD WELLS DEEPENED		
Carter County—		
W. Smith, Ward 5, 120 ft n of c 8½ se se 18-4s-2w (otd 2166)	740	2310
Stephens County—		
O. M. Pierce, Burke 3, nw sw nw ne 34-1s-8w (td 1687)	25	3212

Pennsylvania

Bradford District—		
Esther Oil Co., Inc., Lamton	1	....
M. L. Harding et al, Irons	1	....
Bundler & Harper, Loop	1	....
Bell & Loop, Wood & Armstrong	½	....
Penn Valley No. 2, Fee	1½	....
Messer Oil Corp., Redfield	2	....
Ryder Scott Co., Fee	3	....
McCaffery, Krampf & Clark, Fee	½	....
J. W. Coast, McCaffery	1	....
Roggenbaum Bros., McCaffery	1	....
N. V. V. Franchot Mgr., Tr., Post & Blackmarr	6	....
Bradford Transit Co., 22 wells	22	....
Forest Oil Corp.	1	....
Forest Petroleum Corp.	1	....
Niagara Oil Corp., 4 wells	4	....
Water Intake Wells—		
O. J. Hamlin, Rew	..	....
D.Y.M. Corp., No. E Bing 466	..	....
Melvin Towne Oil Co., Fee	..	....
Quinlan Oil Co., Fee	..	....
Forest Oil Corp., 2 wells	..	....
Forest Petroleum Corp., 3 wells	..	....
Niagara Oil Corp., 6 wells	..	....
New York-Penn Gas Field—		
New York State Natural Gas Co., Oscar Tuttle	*	....
Middle District—		
United Natural Gas Co., Watson	¶	....
Fryburg Motor Co., J. M. Perry	½	....
Fox Estate, Fox	1	....
South Penn Oil Co., Daily	2	....
Water Intake Wells—		
N. V. V. Franchot, Lot 107	..	....
Butler-Armstrong District—		
J. H. Reed, Fee	¶	....

Southwest Pennsylvania

Armstrong County—		
Charles Moesta, Boarts 1	¶0.03	3382
C. W. Beecher Gas Co., Burkett 1	¶0.04	3504
Peoples Natural Gas, Baker 2	¶0.13	3295
Local Co., Wray 1	¶0.01	3878
Clarion County—		
T. W. Phillips, Swartz 2	*	3315
Owens-Illinois Glass, Miller 1	¶0.04	2750
Fayette County—		
Greensboro Gas, Johnson 1	¶0.14	2413
Greene County—		
Peoples Natural, Kent 1991	¶0.05	3360
Mfgrs. Lt. & Heat, Smith 2	¶0.4	3381
Washington County—		
Mingo Gas Co., Gamble 1	¶0.3	1379
Coulter & Duncan, Hood Heirs	4	1962

Texas Panhandle

Gray County—		
Cree & Hoover, M. Davidson 2	84	2985
Danciger, Powell-Beck 23	766	2885
Phillips, Swanson 3	415	3071
Stanolind, Lovett 2	253	3036
Hutchinson County—		
Danube Oil Corp., Sanford 7-A	177	2818
Sanford 9-A	206	2798
Phillips, Cockrell 88	115	3144
Texas Co., J. W. Moore 13	158	3155
Wheeler County—		
Skelly, Harvey 2	68	2168

East Texas

COMPLETIONS

Kilgore Area—		
John Wrather et al, I&GN Ry. 21-A	320	3600
Longview Area—		
Stanolind, McGregor 20	2200	3471
Houston County (Grapeland)—		
American Liberty, M. Howard 1	¶98	6040
Limestone County (Barron)—		
B. F. Weekley et al, Barron 2-A (1st oller)	22	5786
Upshur County (Wildcat)—		
O. J. Perren et al, McClelland 1	*	3977
Wood County (Hawkins)—		
Humble, Lynch 2 (75.16-ac)	527	4645

West Central Texas

Callahan County—		
Kaltenbaugh & Bond, McDaniel 1	*	370
T. S. Stanfield et al, Pittard 6-A	3	319
Coleman County—		
Anzac Oil Corp., Morris 3-F	49	2230
Coleman County (Wildcat)—		
Brannon-Murray & West Coast Pet. Co., Norris 1 (pb 2640)	76	3265
Comanche County—		
L. H. Choate et al, Smith 14	30	635
Jones County (Wildcat)—		
Ungren-Frazier et al, Peyton 1	*	2640
Jones County—		
R. L. Foree-W. H. Sanford, Fikes 1	300	2305
Pet. Producers Co., Akard 6	105	2140
Palo Pinto County—		
W. K. Gordon et al, Noland 2	*	3679
Shackelford County—		
C. B. Christie et al, Reynolds 4	*	797
R. C. Foster et al, Brown-Humble 4-A	4	439
Green 1	*	414
J. L. Hart et al, Clausell 2-A	*	782
Roeser-Pendleton-Conoco, Cook 7-A-117	71	1711
Shackelford County (Wildcat)—		
L. P. Bosser et al, Mathews 1	*	650
Stephens County—		
FHE Oil Co. et al, Corbett 2	¶3½ & 5	4120
OLD WELL DEEPENED		
Stephens County—		
Christie Bros. et al, Donnell 1 (otd 3270) (new pay)	25	4215

United States Well Completions—*Continued*

North Texas

Company, Well and Location	Init. Prod. Bbls.	Depth
Archer County (Wildcat)—		
Phillips, Reilly-Pendry 1	*	6355
Archer County (Scotland)—		
Shell, Coleman 5-A	584	5183
Archer County—		
Pet. Producers Co., King 24	*	1270
Shappell Oil Co., Bell 41	10	998
Young & Woody Drl. Co., Meade 1-C	*	1327
Clay County—		
Bridwell Oil Co., Saner 12	*	1350
J. B. Cunningham et al, Boddy-Texaco 3	*	1311
Geo. Golden et al, Roop 2	*	1150
1st Texas Jt. Stock 14-C	30	1132
Harper & Knappenberger, Bilbrey 7	25	1180
Johnson & Kouri, Taylor-Elliott 8	85	1141
Clay County (Wildcat)—		
Pet. Producers Co., McGregor 1	*	1541
Clay County (New York City)—		
Shell, Willis 2	236	6500
Cooke County—		
Dodson & Iglehart, Lynn 2-B	35	1088
Jack County—		
P. C. Burns et al, Kemp 1	18	2936
Ben Rankin & Elliott Prod. Co., Stewart 2	*	3547
Montague County—		
Continental, Rowland 24	10	776
Montague County (Nocona-Rogers)—		
Stanolind, Hill 3 (pb to 5256)	352	5436
Throckmorton County—		
Owenwood Pool Co. No. 3, Housley 19	*	780
Wichita County—		
W. H. Hammon-Hanlon-Buchanan, Fassett-Tuttle 38-A	21	618
L. A. Prince et al, Warren 5	1	580
R-G Drl. Co., Warren 7	23	1811
C. F. Schram et al, Al Daume 1	10	675
Al Daume 2	10	680
F. Daume 2	50	684
Wichita County (K-M-A)—		
Hanlon & Buchanan, Fassett-Tuttle 27-E	440	4040
Fassett-Tuttle 33-G	456	4071
Wichita County (K-M-A Ellenberger)—		
Tide Water Associated, Ferguson 9-E	1240	4375
Wilbarger County (Fargo)—		
Anderson-Prichard Oil Corp., Anderson 2 (pb to 4062)	183	4651
Wilbarger County—		
Ross Robertson et al, Waggoner Est. 1	60	2400
Wilbarger County (Wildcat)—		
Bruce Sullivan et al, Hamilton 1	*	4710
Young County—		
Bronlon Producing Co., Taylor 3	1984	4022
Thos. D. Humphrey et al, Williamson 2	1133	5054
W. F. Palmer et al, Campbell 6-D	9	906

GAS INPUT WELL

Cooke County—		
Trumter Pet. Co., Stacey 1-B	..	753

OLD WELLS DEEPENED

Cooke County—		
Denver Prod. & Ref. Co., Allred 1 (otd 4582)	*	5124
Kewanee Oil Co., Dennis 22-A (otd 1286)	*	1360
Jack County—		
Alma Oil Co., Maxey 1 (new pay) (otd 5387 & pb to 5425)	13	5665
Montague County—		
Benton & Holmes, Reed 4-A (otd 2328)	90	2485

Southwest Texas

CORPUS CHRISTI DISTRICT

Brooks County (Alta Mesa)—		
Standard of Texas, Mestina 20-Tr 1	130	2515
Brooks County (Kelsey)—		
Magnolia, State-Marshall 13	450	4976
Brooks County (LaGloria)—		
LaGloria Operators, South Unit 1, dual sd, outpost	¶150 & 500	6900
Hidalgo County (Wildcat)—		
LaGloria Corp., W. C. Adams 1	*	9008
Jackson County (N. LaWard)—		
Magnolia, Gordin 4	450	5227
Phillips, Johnson 1	375	5280
Jackson County (W. Ranch)—		
Humble, Vanderbilt-State 5-B	*	5607
Magnolia, West 203-A	450	5606
West 214-A	400	5597
Jackson County (W. Ganado)—		
Pure, J. Powers 1	500	6332
Jim Wells County (Seeligson)—		
Transwestern, Dunlap 7	500	6250
Jim Wells County (Stratton)—		
Chicago Corp., Wardner 23, dual sand, outpost	¶100 & 300	6702
Jim Wells County (Wade City)—		
Smith & Moser, B. H. Mueller 1, new sd 3283-3302	¶20 & 50	5100
Jim Wells County (Wildcat)—		
Gust Tsesmelis, P. S. Joseph 1	*	6093
Nueces County (Agua Dulce)—		
R. H. "Dick" Hawn, Wofford 2-D, dual sand	¶150 & 500	7060
Lockhart Oil Co., Luling Foundation 1	¶80 & 150	7075
Nueces County (Bentonville-King)—		
Southern Minerals, King 23	30	5635
Refugio County (S. McFaddin)—		
P. R. Rutherford, Fagan 6-C	350	5658
San Patricio County (Midway)—		
Henshaw Brothers, T&NO 1	300	5348
San Patricio County (Odem)—		
Seaboard, Lane 2	400	5326
Victoria County (E. Placedo)—		
W. L. Goldston, Agnes West 1	600	6920
Victoria County (N. Keeran)—		
Barnsdall, Keeran 2-A	¶60	7115
Willacy County (Wildcat)—		
Clark & Cowden, Garcia L & L Co. 1	*	8505

LAREDO DISTRICT

Duval County (Driscoll)—		
Continental, Driscoll 73-A	750	3407
Duval County (E. Cole)—		
E. C. L. Oil Co., R. Benavides 2	18	1726
Duval County (Sekita)—		
Trinity Gas Co., Barerra 1, e outpost	*	6085
Jim Hogg County (Colorado)—		
Humble, King-Colorado 45-B	550	2858
Starr County (Kelsey)—		
Humble & Royal, E. Trevino 1	325	4768
Starr County (Sun)—		
Sun, Speer-State 12-B	400	4667
Webb County (Killam)—		
Anderson & Killam, Laurel 1	63	2012

SAN ANTONIO DISTRICT

Atascosa County (Wildcat)—		
Lester Foran, Tr., W. J. Bowen 1	*	1020
Bexar County (LaCoste)—		
Pegg Bros., Medina Farms 1	¶0.75	1240
Bexar County (Wildcat)—		
Wellington Oil Co., Schultz 1	*	1809
Caldwell County (Tenney Creek)—		
Ben Goldsmith, Taylor 1	18	2525
Ogden & Riddle, Perry 1-A	5	2570
Dimmitt County (Wildcat)—		
Wellington, Sullivan 1-B, new field, sd 1084-91 ft.	¶1	3005
Medina County (Wildcats)—		
Ben Banner, Haegelin 1	*	1720
F. D. Spratt, Haeglin	*	40

West Texas

Cochran County (Slaughter)—		
Honolulu, Igoe-Smith 13	855	5052
Geo. P. Livermore, Boyd-Texaco 18	1512	5050
Magnolia, Mallet 5	1100	5010
Woodley 18	969	5010
T.P. Coal & Oil Co., Tarver 1	1137	5001
Crockett County (Wildcat)—		
J. S. Pittman et al, Bouscaren 1	*	2418
Ector County (Foster)—		
Sinclair Prairie, Dora Johnson 1-D.	824	4220
J. L. Johnson 27-B	1209	4211
T.P. Coal & Oil Co., Johnson 7	398	4265
Ector County (Goldsmith)—		
Gulf, Goldsmith 377	979	4219
Goldsmith 378	1694	4272
Ector County (Jordan)—		
Sinclair Prairie, University 3-78	844	3632
Ector County (North Cowden)—		
Sinclair Prairie, Johnson 25-D	1863	4165
Snowden-McSweeney Co., Holt-Shell 2	397	4581
Stanolind-Magnolia, Holt 3	2129	4734
Texas Co., Holt 17	475	4780
Fisher County (McCaulley)—		
Brown-Gardner-Higginbotham, Eivens 1	125	3326
Gaines County (Wasson)—		
Continental-Amon Carter, Langdon 14-44	988	5025
Hockley County (Slaughter)—		
Devonian, Mallet 5	1438	5057
Honolulu, Mallet 14-B	931	5035
Mallet 18-B	1315	5020
Magnolia, Mallet 18-J	1291	5031
Stanolind, Slaughter 23-A	1256	5070
T. P. Coal & Oil Co., Lauhoff 3	736	5001
Mallet 5-B	1137	5030
Texas Co., Mallet 18-E	1052	5040
Slaughter 44 (pb 5066)	2516	5075
Slaughter 51	1386	5030
Slaughter 53	1609	5010
Slaughter 54	2336	5040
Slaughter 56	1869	5040
Slaughter 60	1380	5000
Slaughter 61	1587	5017
Slaughter 63	1350	5010
Lubbock County (Wildcat)—		
L. C. Harrison-Tobe Foster, Steck 1	*	5530
Mitchell County (Northwest)—		
F. W. Merrick, Inc., Strain 4	180	1781
Pecos County (Abell)—		
Stanolind, H. Johnson 1	420	5971
Pecos County (Apco)—		
Anderson-Prichard Oil Corp., Boren 2	*	4858
Pecos County (Taylor-Link)—		
Cardinal Oil Co., University 1, sec 3	15	1604
Pecos County (Tobarg)—		
Stanolind, Tippett 21-A	7	370
Tippett 24-B	8	411
Tide Water Associated, Smith 1-T.	119	507
Reagan County (Barnhart)—		
Amerada, University 1-R-C	*	2790
Terry County (Wildcat)—		
American Drl. Corp. et al, Hufnall 1	†	5435
Upton County (Gulf-McElroy)—		
Gulf, McElroy 259	242	3163
Upton County (McCamey)—		
Shell, Baker 15	518	2250
Ward County—		
Standard of Texas, Harding 1	*	2970
Winkler County (Emperor)—		
C. V. Lyman et al, Cowden-Tide Water 4	4011	2830
Winkler County (Keystone)—		
Gulf, Keystone 44	†	315
Yoakum County (Wasson)—		
American Liberty, Randall-Texaco 7	397	5232
Continental, Kendrick 6-868	1187	5115
Drl. & Explo., Inc., Hudson-Shell 3-C	593	5100
Randall-Humble 5-A	668	5115

OLD WELL DEEPENED

Howard County—		
Mid-Continent Pet. Corp., Denman 1 (otd 2813)	146	2860

West Virginia

Calhoun County—		
Creed Yoak, Stump 1	20	2180
McCall Drlg. Co., Smith 2	¶0.19	2190
Godfrey L. Cabot, Inc., Elliott 1	*	2329
Hope Natural, Howell 8575	¶0.08	2129
Gilmer County—		
Pittsburgh & W. Virginia, Barton 1	¶	2301
W. H. Mosser, Gregg 1	¶0.1 & 1	2620
Jackson County—		
United Fuel Gas Corp., Scherr 5036	¶3.5	5032
West Va. Gas Co., Carney 1	¶10.19	5113
Columbian Carbon Co., Carney 1	¶1.30	5043
Everett Starcher et al, Hinzman 1	¶3.23	5204
Kanawha County—		
Joe Rubin, Bailey 1	¶0.5	1496
Mingo County—		
Breeden Oil & Gas Co., Moore 1	¶0.57	1223
Monongalia County—		
Manufacturers, Shriver 10	¶0.08	3030
Pleasants County—		
Arthur M. Cokeley, Johnson 2	½	1520
Hogpen Oil & Gas Co., United Bank of Middlebourne	¶0.17 & 2	1961
Putnam County—		
Summit Gas, Wood 1	¶0.15	2173
Monickle Gas, Lake 2	¶0.08	2463
Ritchie County—		
Watson Oil & Gas Co., Haddox 1	¶0.13 & 2	1833
Hope Natural, Welling 8558	¶0.5 & 8	2201

Texas Gulf Coast

Brazoria County (West Columbia)—		
Texas Co., Abrams 44	346	5898
Chambers County (Red Fish Reef)—		
Humble, Galveston Bay-State A-28	169	8710
Hardin County (Saratoga)—		
Weldon Oil, Texas Crude 11	25	1214
Hardin County (Sour Lake)—		
H. F. Baker, Sun Oil 2	78	1651
Harris County (Humble)—		
Wilson Oil, Landslide 1	15	628
Jefferson County (Lovell Lake)—		
Phillips, Hillebrandt Bayou 1	154	7875
Liberty County (Hull)—		
Houston Production, Heinple 1-B	*	6439
Texas Co., Armelin Fee 2	538	6370
Madison County (Wildcat)—		
Sun, G. P. Day 1	*	2505
Matagorda County (Wildcat)—		
Dr. W. S. McDaniel, Howard 1	*	1993
Matagorda County (Blessing)—		
Texas Co., Braden Unit 1	155	8320
Matagorda County (Markham)—		
Hamill & Hamill, Myers 9-B	147	2829
Wharton County (Withers)—		
Texas Co., Thompson B-4	74	5547

West-Central Texas Oil Men Meet in January

The annual meeting of the West-Central Texas Oil & Gas Association will be held shortly after the middle of January, W. J. Rhodes, Breckenridge, association president, announced last week. Exact date and place of the meeting will be determined by the executive committee at a conference in December.

Change to January for the meeting is a departure from the practice followed the past four years. The gatherings have been held in December since 1937.

The change was made after a mail referendum of the 75 directors. It is thought that by delaying the West-Central Texas meeting until after the middle of January a larger number will be able to attend.

WILDCAT REPORT
New Starts and Completions

ARKANSAS
COMPLETION

Ouachita County—Lee Bergman, Cook 3, nw sw 27-15-18, making 50 bbls oil daily from Nacatoch, td 1619 ft.

CALIFORNIA
FIRST REPORTS

Kern County—General Petroleum Corp.'s Gallagher 61-33, 33-31-26, Paloma area, grade.

Ventura County—John A. Alford's Arundell 1, 19-4-19, Sespe area, rig.

ILLINOIS
FIRST REPORTS

Clay County—A. L. Stewart et al's Walker Hrs 1, w½ sw sw 27-3n-5e, lcn.

Fayette County—L. B. Hoss et al's Knecht 1, ne se ne 36-5n-1e, lcn. William H. Brown's Radliff 1, c s½ nw ne 24-7n-1e, lcn.

Franklin County—Adkins et al's Ice 1, 117 ft s of ne nw se 21-7s-3e, lcn.

Gallatin County—Carter's Whipple 1, sw se se 21-7s-8e, lcn.

Hamilton County—D. H. Moffett et al's Harriss 1, s½ sw se 1-4s-6e, lcn.

Jefferson County—Baldwin et al's McNeil 1, nw nw nw 32-2s-1e, lcn. T. Blake Dirickson's Miller 1, ne ne ne 18-2s-2e, lcn. J. R. Less' Barnett 1, sw sw se 29-3s-1e, lcn. Kingwood's Interstate Coal Co. 1, n½ ne nw 4-4s-2e, lcn.

Johnson County—H. T. McGee et al's Taylor 1, 60 ft w of c s½ se ne 34-13s-4e, dr.

Perry County—Adkins' Pyramid Coal Co. 1, sw sw ne 10-6s-3w, lcn.

Richland County—Seaboard's Wetzel 1, w½ ne se 13-2n-14w, lcn.

Saline County—R. Hal Compton's Durham 1, se se se 30-7s-6e, lcn.

Washington County—Mississippi Valley Trs. Co.'s Leibroch 1, sw sw nw 21-2s-3w, lcn.

COMPLETIONS

Clay County—Longhorn Oil et al's Harmon 1, w½ nw sw 36-5n-7e, abnd 3039 ft.

Clinton County—Jack Darnell's Beckmeyer 1, c se nw sw 25-3n-3w, abnd 1080 ft.

Coles County—Eastern Ill.'s Halleck 1, se se sw 20-13n-14w, abnd 722 ft. A. M. Meyers' Ashmore 1, se nw sw 28-13n-14w, abnd 455 ft.

Edwards County—Mabee Drlg. Co.'s Smith 1, nw nw se 7-3s-10e, abnd 3092 ft.

Hamilton County—Mid-Sun Oil Corp.'s Hoffman 1, n½ ne nw 22-5s-5e, abnd 3527 ft.

Jackson County—E. S. Adkins' Parrish 1, ne nw sw 9-7s-1w, abnd 2873 ft.

Marion County—Doran & Buttram's Morgan 1, se nw ne 12-4n-2e, abnd 2240 ft.

Perry County—Blankenship et al's George 1, nw ne sw 23-4s-1w, abnd 1614 ft.

Randolph County—J. Bedell et al's Hoyer 1, se nw sw 4-5s-6w, abnd 506 ft.

Washington County—Schachtsiek's Newton 1, nw ne ne 4-3s-4w, abnd 451 ft.

White County—A. L. Cochrane's Hamilton 1, c e½ e½ sw 14-7s-8e, otd 2923 ft, pb to 2265 ft, abnd.

INDIANA
FIRST REPORTS

Gibson County—Allan Borton et al's Ewing 1, 78-1n-10w, lcn.

Pike County—Dawson & Stead's Patberg 1, sw nw se 16-3s-7w, lcn.

Posey County—John Lindas et al's Pfeiffer 1, c sw nw sw 6-6w-12w, lcn. John Lindas et al's Thomas 1, c ne ne se 24-7s-13w, lcn. Sun Oil Co.'s Leonard 1, sw ne nw 21-8s-14w, lcn.

Spencer County—Cherry, Kidd et al's Lake 1, se sw ne 33-5s-5w, dr.

KANSAS
FIRST REPORTS

Harper County—Earl Wakefield's Henderson 1, c n½ nw nw 26-32s-3e, mim.

Jefferson County—Mosebacher's Locke 1, c ne sw 19-9s-21e, dr.

Norton County—H & P et al's LeCount 1, c se se 1-2s-25w, lcn.

Pawnee County—Stanolind's Smith 1, c n½ se se 16-23s-16w, lcn.

Stafford County—Iron Drlg.'s Findlay 1, c w½ nw se 6-24s-12w, lcn.

Sumner County—Waite Phillips' Forney 1, nw nw nw 13-30s-1w, lcn.

COMPLETIONS

Barton County—Continental Oil's Everleigh 1, se se nw 11-18s-13w, Lansing 3068 ft, Congl 3324 ft, Arbuckle 3351 ft, cored 3358-76 ft, no show, td 3376 ft, abnd.

Edwards County—Stanolind's Arensman 1, "A", c s½ ne se 23-25s-19w, Anhy 1285 ft, Lansing 4100 ft, cored 4249-63 ft, 12 ft dense ls no show, Miss 4645 ft, Viola 4772 ft, Simpson 4997 ft, Arb 5065 ft, abnd 5166 ft.

Nemaha County—Bumpus et al's Achton 1, s½ se nw 12-4s-14e, sand 2287-99 ft, show gas Miss 2553 ft, Kinderhook 2686 ft, Hunton 2958 ft, abnd 3130 ft.

Sumner County—Central Pet. et al's Steward Est. 1, c s½ se nw 22-31s-3w, Ft. Riley 890 ft, Topeka 2290 ft, K. C. 3293 ft, Miss 3966 ft, PB 3949 ft, PB 3875 ft, Base Miss 4320 ft, Wilcox 4390-4506 ft, Arbuckle 4504 ft, porosity 4524-28 ft, no show, TD 4536 ft, abnd.

Reno County—Simpson Oil's Paine 1, sw nw ne 5-24s-10w, Topeka 2860 ft, Lansing 3365 ft, Miss 3664 ft, Kinderhook 3705 ft, cored 3824-39 ft, 1 ft sandy shale, Miss 3828 ft, Viola 3834-49 ft, no show, 32 holes 3828-34 ft, no show, 2500 gals acid, water in hole, abnd.

KENTUCKY
FIRST REPORTS

Henderson County—Creek Drlg. Co.'s Clayton 2, 19-0-26, dr.

Union County—Joe Sulanger et al's Winston's 1, 16-M-20, lcn.

COMPLETION

Union County—Sun Oil et al's Reyburn 2, 20-O-18, Mans sd 1321-42 ft, initial production on pump 115 bbls oil in 22 hrs.

NORTH LOUISIANA
FIRST REPORTS

LaSalle Parish—Carter Oil Co., Catahoula Lake A-1, c sw nw 5-6n-4e, cln; Catahoula Lake B-1, c sw nw 8-6n-4e, lcn.

Rapides Parish—Carter, Catahoula Lake 8-1 (state), c sw ne 32-6n-3e, lcn.

Union Parish—Carter, Waldon 1, sw 19-21n-2w, spd.

COMPLETION

Catahoula Parish—Carter and Phillips Cotton-Womack 1, ne 12-6n-6e, 15 bbls 36.5-gr oil per hour from Wilcox, perfor 5533-37 ft, td 6810 ft.

SOUTH LOUISIANA
FIRST REPORTS

Ascension Parish—George Echols and R. T. M. McDermott's Southwood Riverside 1, 3500 ft se St. Gabriel field, lcn.

Evangeline Parish—L. M. Josey's Hirsch 1, ¾-mi sw Pine Prairie, c ne se ne 2-4s-1w, prep to drill.

Rapides Parish—Carter Oil Co.'s State 1-B, Catahoula Lake area, 10 mi north M. H. Marr and Phillips' Eota Realty 1, in sec 32-6n-3e. Noble Drilling Co., cont, mim.

St. Martin Parish—Amerada's Schwing-Case 1, nw 31-11s-10e, rig.

Terrebonne Parish — Superior's Laterre 1, East Jug Lake area, between Jug Lake and Lake Decade, in 27-19s-15e, projected 12,000 ft on 8500-ac block, prep to drill.

COMPLETIONS

LaFourche Parish—Texas Co.'s LaFourche Basin Levee District 1-A, Hackberry area, discovery gas well, 32-19s-24e, perf 2460-90, flowed 750,000 gas, 10/64-in ch, tp 1050.

Rapides Parish—Placid Oil's (H. L. Hunt) Bentley 1, 11-4s-5w, abnd 6321 ft.

St. Mary Parish—Texas Co.'s State-Cote Blanche Isle 1, in Cote Blanche Bay Isle, top salt 9220 ft, abnd 9239 ft.

MICHIGAN
FIRST REPORTS

Allegan County—Roy Wetmore's Oetman 1, ne ne ne 29-3n-15w, lcn.

Calhoun County—Continental's Turner 1, ne se ne 15-3s-4w, mim.

Huron County—Mercer Dr. Co.'s Citizens Bank 1, ne ne se 14-15n-14e, rig.

Muskegon County — Casnovia Dev. Co.'s Westcott 1, nw nw sw 22-10n-13w, rig.

Oakland County—Fisher-McCall's LaBell 1, ne se se 18-3n-7e, lcn.

Osceola County—Taggart Bros. Co.'s Diehlman 2, sw se nw 5-18n-7w, dr.

Ottawa County—Temples & Boos' Taylor 1, nw nw sw 31-7n-14w, dr.

Roscommon County—Sun's St. Helen 1, c s½ sw sw 21-24n-1w, rig.

Saginaw County—Sun's Rosewig 1, c n½ nw nw ne 26-11n-1e, rig.

COMPLETION

Muskegon County—Jacob Bolema's Whitlock 1, c e½ ne sw 34-10n-15w, Traverse 1850 ft, abnd 2300 ft.

MISSISSIPPI
FIRST REPORTS

Adams County—L. H. Simpson (Mexia, Texas), Fairchild Island Plant Co. 1, 18-9n-2w, mat.

Hinds County—Plains Prod. Co. (Dallas), Fee 1, 1-7n-4w, mat.

Warren County—Placid Oil Co., Hall 1, 36-17n-5e, mat.

Yazoo County—J. P. Evans, Dozell Johnson 1, Sec 31-19n-2w, mat.

NEBRASKA
FIRST REPORT

Richardson County—Richee Oil's Dowell 1, sw nw ne 31-2n-15e, dr.

COMPLETIONS

Gage County—Walt Rider et al's Warren 1, c ne ne 21-3n-5e, Hunton 1930 ft, show gas 2000-20 ft, some sat 2535-40 ft, Vi 3565 ft, Deborah 2630 ft, St. Peter 2763 ft, Pre-Camb

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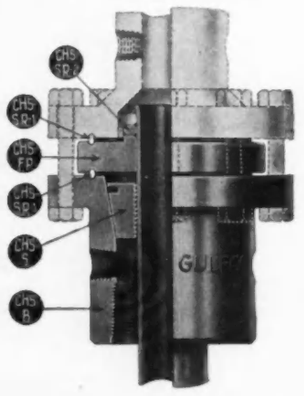

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2830 ft, TD 2858 ft, PB 2630 ft, drld plug 2608 ft, hole full water, set plug 2340 ft, 12 shots at 1990-96 ft, hole full water, 1900 ft, water in hole, abnd.

Richardson County—Powers Oil et al's Albin Est. 1, sw nw sw 10-1n-14e, Miss 2009 ft, cored 2205-27 ft, granite shale and dolo 1½ ft porous stains, Hunton 2219 ft, cored 2226-32½ ft, 6½ ft fair sat, TD 2274 ft, ran Schlum, fair porosity & sat at 2220-35 ft, shot, PB to 2246 ft, pump 106 bbls oil 28 hrs, some water.

NEW MEXICO

FIRST REPORT

Lea County—Culbertson & Irwin, Inc.-Southern Cal. Pet. Corp.'s Lynch 1, c sw sw 21-19s-32e, lcn.

COMPLETION

Eddy County—Nay Hightower et al Grier 1, c nw nw 31-16s-31e, sandy-lime 3108-18 ft, flowed 390 bbls 37.4-gr oil natural ¾-in initial.

OKLAHOMA

FIRST REPORTS

Cimarron County—Gulf's Cox 1, se se 35-2n-8ecm, lcn.

Garfield County—Phillips Pet Co.'s Lydia 1, nw ne nw 36-21n-3w, lcn.

Hughes County—Hendow Inc.'s Brown 1, se sw se 25-8n-8e, cellar.

Pittsburg County — Public Service Co.'s Tribal Lands 1, Loc not given 9-4n-16e, dr.

Pototoc County—Bert Payne's Sweeney 1, se se ne 23-4n-5e, dr.

Seminole County—C. A. Palmer's Humphrey 1, sw nw ne 15-6n-5e, lcn.

COMPLETIONS

Coal County—Magnolia Petroleum Co.'s Pope 1, se se ne 34-1n-9e, abnd 1406 ft.

Comanche County—Texas Company's State Land 1, sw se nw 13-3n-10w, Hennessey shale 370 ft, Garber 787 ft, Cisco 6990 ft, no show oil or gas, abnd 7170 ft.

Lincoln County—Big Chief's Barrett 1, c s½ sw ne 20-13n-6e, Hogs 1878 ft, Ccb 2078 ft, OS 3080 ft, Mayes 4030 ft, Wd 4150 ft, Hunton 4185 ft, Syl 4255 ft, Vi 4243 ft, Dense 4380 ft, Dolo 4390 ft, 1st Wx 4425 ft, TD 4449 ft, PB 4260 ft, acid 2500 gals 12,000 MCFG, 1350 pound RP, gas 13,000 MCFG with 1625 pound RP, completed.

Oklahoma County—Harper & Turner's Yeager 1, sw se ne 32-14n-3w, Oread 4250 ft, Os 6035 ft, Bartles 6257 ft, TD 6325 ft, ran Jeep, drld out 6325 ft, bailed dry, had ssg & wtr, abnd.

Seminole County—Ramsey Petroleum Co.'s Harjo 1, nw se se 24-6n-6e, Calvin 1565-1601 ft, Cromwell 2850-2932 ft, cored 1575-85 ft, sand, shaly sd, show oil, cored 1588-1601 ft, sand, show oil, shale, Mayes 3325 ft, Wood 3636 ft, Hunton 3990 ft, Crom 2852 ft, Caney 3050 ft, Miss Caney 3268 ft, Mayes 3546 ft, Wood 3660 ft, Hunton 3876 ft, Syl 3880 ft, Viola 3952 ft, Dense 4050 ft, Dolo 4090 ft, Wx 4152 ft, TD 4174 ft, in Wx, ran Schlum, perf 7 at 2210-15 ft, mud, perf 8 at 1565-67 ft, show mud, cmt, drld out to 1585 ft, hole full mud, recemt, abnd. Mico Oil Co.'s Kidd 1, ne nw se 33-10n-8e, OTD 3746 ft, PB 2160 ft, drld out and flowed 70 bbls oil from Senora 2145-58 ft, swb 32 bbls oil, completed.

SOUTHWEST TEXAS

FIRST REPORTS

Bexar County—G. P. Oakes et al's Applewhite 1, Thelma pros, mi.

Duval County—Forest Dev. Corp.'s Benavides 1, sec 691, 4 mi ne Bruni, lcn 3100-ft test, Frank J. Gravis' Bennett 1, sec 433, 10 mi e Bruni, lcn 2800-ft test, Magnolia's D. C. R. C. 3, sec 902, 15 mi sw Freer, ru 2100-ft test.

Hidalgo County—Rowan & Hope's Guerra 1, sec 195, 5 mi ne LaReforma, ru 7000-ft test.

Jackson County—Rowan Dr. Co.'s McColloch 1, Williams sur Ab 270, ru 5500-ft test.

Jim Hogg County — Adams, Neuhaus & Lucky's East 1, El Randado gr, Chaparosa pros, lcn 3500-ft test.

Nueces County—Geo. E. Greer's Theiss 1, blk 10, Bishop sub, 8 mi se Driscoll, mi 6600-ft test.

San Patricio County—Forest Dev. Corp.'s Henry 1, lot 40, Drummond sub, 7 mi sw Taft, lcn 7150-ft test.

Webb County—Wolcott & Rehmet's Lloyd 1, blk 2, CCSD&RGNG sur, 5 mi n Oilton, lcn 2000-ft test.

Zapata County—H. H. Coffield's Ramirez 1, blk 10, por 17, 4 mi e Lopeno, lcn.

COMPLETIONS

Atascosa County — Lester Foran, Tr.'s Bowen 1, Moore sur 895, 1 mi w Pleasanton, abnd 1020 ft (fresh water well).

Bexar County — Wellington's Schultz 1, Rodriguez sur, 1½ mi nw New Berlin, top Edwards 1805 ft, abnd 1809 ft.

Brooks County—LaGloria Operators Committee's S. Unit 1, lot 2, blk 13, LaGloria area, comp as dual sd g & dist well, perf 6010-30 ft & 6078-95 ft, also 5850-60 ft & 5897-5920 ft; extends fld 1 mi sw.

Dimmitt County—Wellington's Sullivan 1-B, sec 602, 12 mi nw Carrizo Springs, td 3005 ft,

RESULTS Count

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SOUTHWEST TEXAS

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Ventura Ave.	L. B. Harbor
Signal Hill	Santa Maria
Del Valle	Coalinga N. E.
Huntington Beach	Coyote Hills

. . . and others

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perf 1084-90 ft, comp est 1000 gas, 310 lbs SIP; new field.

Hidalgo County—LaGloria Corp.'s Adams 1, LaBlanca gr, 5.7 mi s Donna, abnd 9008 ft.

Jim Wells County—Chicago Corp.'s Wardner 23, sec 4, Stratton fld, td 6702 ft, comp dual sd g & dist well, Perf 6562-67 & 6510-30 ft, also 6404-43 ft. H. R. Smith & Harry Mosser's B. H. Mueller 1, Wade City, sand 3282-3302 ft, td 5100 ft, comp 20,000 gas & dist, SIP 1400 lbs. Gust Tsesmelis' Joseph 1, sec 9, 2½ mi s Camada fld, abnd 6093 ft.

Medina County—Ben Banner's Haeglin 1, Henley sur, 6 mi sw Hondo, abnd 1720 ft. F. D. Spratt's Haeglin 1, BFI&M sur, near Banner well, sp, set sur csg, idle.

Willacy County—Clark & Cowden's Garcia Land & Livestock Co 1, lot 21, C & H Sub, 3 mi nw Sal Vieja pros, abnd 8505 ft.

WEST CENTRAL TEXAS

COMPLETIONS

Coleman County—Brannon-R. H. Murray and West Coast Pet. Co.'s Norris 1, swc of ne 160-ac tr, James Greenwood sur 304, new pool, elev 2126 ft, td 3265 ft, pb 2650 ft, used acid via perforations 2600-30 ft, pumped 76 bbls 40-gravity oil, plus 33⅓% water.

Jones County—Ungren-Frazier et al's Payton 1, 330 ft from s and 1070 ft from e lines 100-ac tr, S. M. Hale sur 251, elev 1708 ft, top Dothan 1821 ft, abnd 2640 ft.

Shackelford County—L. P. Blosser et al's Matthews 1, se sw sw sec 35, Blind Osylum Lands, abnd 650 ft.

Stephens County—Christie Bros. et al's (was Cox & S. Caprito) Donnell 1, 2900 ft from n and 440 ft from e lines TE&L sec 1208, dd from 3270 ft, new pay and wast extension, saturated lime 4210-15 ft, pumped 25 bbls.

WEST TEXAS

FIRST REPORT

Reeves County—J. W. Byrd et al's S. E. Ligon-State 1, nwc H&GN sec 22, blk 7, mim for 1300-ft test.

COMPLETIONS

Crockett County—J. S. Pittman et al's Bouscaren 1, nwc GC&SF sec 29, blk HH, elev 2320 ft, top lime 2240 ft, abnd hfw 2415-18 ft.

Lubbock County—L. C. Harrison-Tobe Foster's Steck 1, se sec 7, blk A, J. H. Gibson sur, elev 3247 ft, top anhydrite 1670 ft, abnd 5530 ft.

Terry County—American Drl. Corp. et al's Hufnall-T.P. Coal 1, sec C&M sec 14, blk D-14, elev 3528 ft, top anhydrite 2420 ft, brown lime 4160 ft, San Andres 4520 ft, jkd 5435 ft.

NORTH TEXAS

FIRST REPORTS

Cooke County—E. L. Wilson et al's Biffle-Payne 1, 330 ft from e and 990 ft from s lines 130-ac lse, Marshall University sur, mim.

Wilbarger County—Lester A. Luecke et al's Foerster 1, nec H&TC sec 30, blk 9, lcn 3500-ft test.

COMPLETIONS

Archer County—Phillips Pet. Co.'s Reilly-Pendry 1, c sw nw H&TC sec 13, blk 4, top Canyon 3154 ft, top Bend 4908 ft, Ellenberger 5273 ft, abnd 6355 ft.

Clay County—Petroleum Producers Co.'s McGregor 1, 1325 ft from nw (highway) and 1050 ft from sw lines blk 30, Pratt subdiv, abnd 1541 ft.

Wilbarger County—Bruce Sullivan et al's Hamilton 1, ne cor w½ H&TC sec 47, blk 12, abnd 4710 ft.

TEXAS GULF COAST

FIRST REPORTS

Brazoria County—Shell's Clemens State Prison Farms 1, east flank Clemens Dome, 400-ac tract, John McNeil Lge, A-92. Stern & Stern subd., east Clemens 5, 6350 ft dry hole, 7500 ft test, prep to drill. West Production Co.'s Cowell 1, South Mykawa area, 80-ac tract, H. T. B. sur., A-237, blk 5, 3000 ft w-nw Annie Abell 1, 6929 ft, dry hole, 8500 ft test, rigging up.

Harris County—J. L. Davidson's W. S. Swilley 1, Dyersdale area, 6268 ft e of w l & 3250 ft n of s l of V. Blanco sur, A-2, lcn.

Sabine County—K. E. Merren's Stark-Brown Lbr. Co. 1, Theo. Koester sur No. 8, rig.

COMPLETIONS

Madison County—Sun's G. P. Day 1, 2 mi w Madisonville, John Crownover sur, sand showing oil logged 2364-78 ft, tested fresh water, td 2505 ft, abnd.

Matagorda County—Dr. W. S. McDaniel's Howard 1, L. Ramey lge, td 1993 ft, abnd.

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Letters to the Editor

Lion's Earnings

DEAR SIR:

I wish to call your attention to an article published in the November 17 issue of THE OIL WEEKLY entitled "Earnings Favorable as Oil Use Expands While Prices Improve," in which earnings figures for Lion Oil Refining Company are incorrectly stated.

The discrepancies appearing in figures used for the company are:

1. Third-quarter earnings for 1940 are shown as $598,662 after income taxes, whereas the correct figure is $80,584. The incorrect figure apparently resulted from subtracting our six months net *after taxes* from our nine months net *before taxes.*

2. The figures shown as third-quarter earnings for 1937, 1938 and 1939 are correct for net *before taxes* but are designated as net *after taxes.*

3. Nine-months earnings figures for 1939 is designated as net *before taxes* whereas it is actually our net *after taxes.*

4. The percent change in the 1940-1941 third-quarter figures is shown as a *decrease* of 23.8. The correct change is an *increase* of 278.1.

In addition I wish to point out that the percent change in the nine-month figures used for 1940-1941 does not reflect a true comparison in that the comparison is made between net *before taxes* for 1940 and net *after taxes* in 1941. A comparison of our net after taxes for these periods shows an increase of 62.2 percent.

The correct earnings figures that should have been used are set out below:

	Third Quarter	Nine Months
1937 (before taxes)...	$489,004.42	$1,020,268.40
1938 (before taxes)...	389,533.18	984,688.69
1939 (after taxes)....	165,579.83	380,938.29
1940 (after taxes)....	80,584.10	459,324.81
1941 (after taxes)....	304,726.64	745,063.20
Pct. change 1940-41..	278.1 Inc.	62.2 Inc.

Due to the fact that we did not release earnings after taxes prior to 1939, net before taxes is shown for 1937 and 1938.

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MEN IN THE INDUSTRY'S NEWS

E. L. DeGOLYER, consulting oil engineer of Dallas, and deputy for conservation in the Petroleum Coordinator's office, has been awarded the John Fritz medal for 1942, the high engineering award sponsored by the four Founder American Engineering Societies. Presentation of the medal will be made under the auspices of the the American Institute of Mining and Metallurgical Engineers at a dinner to be held in New York City on January 14, 1942.

The award to Dr. DeGolyer was made in recognition of his pioneer work in applying geophysical exploration methods in discovery of oil fields. In 1940 DeGolyer received the Anthony F. Lucas gold medal from the A.I.M.E. by way of recognition of the same achievements for which he has been awarded the Fritz medal.

Dr. Golyer formerly was a member of the United States Geological Survey, chief geologist for Mexican Eagle Oil Company, and organizer of Amerada Corporation. He is senior member of DeGolyer, MacNaughton & McGhee, and at present occupies the chair of Distinguished Professor of Geology, University of Texas. He was presented the distinguished service award of the Texas Division of Mid-Continent Oil & Gas Association in 1939.

JAMES A. LEWIS of Core Laboratories has been elected president of the Dallas Petroleum Geologists, succeeding Lewis W. MacNaughton. Dr. C. C. Albritton, Southern Methodist University, was named vice president; Barney E. Fisher, Coronado Corporation, secretary-treasurer; Fred E. Joekel, Magnolia Petroleum Company, executive committee.

G. L. BRENNAN joined the staff of the Warren Petroleum Corporation December 1 as manager of its liquefied petroleum gas division. He will have his office at Tulsa.

A. A. GUSTAFSON has recently been appointed director of personnel and safety of The Buda Company, Harvey, Illinois. He is a graduate mechanical engineer from Purdue University. He has had 15 years practical experience with manufacturing concerns in the Chicago area.

For the last year and a half he was employed by the federal government as a safety engineer, where he organized and directed a safety division for a government department in Illinois.

FRANK J. GARDNER spoke on "Proration Trends for the Future in Texas" before the Houston Geological Society, December 4.

GLEN WIGTON, eastern field man for Franks Manufacturing Company, is at the general office, Tulsa, for a short period. His headquarters are at Evansville, Indiana.

T. D. TABBERT, petroleum engineer, Shell Oil Company, has been transferred from Perry, Oklahoma, to Pampa, Texas.

SAM W. HOGAN, who has been production superintendent for Transwestern Oil Company at Hutchinson, Kansas, has been transferred to San Antonio, Texas.

PAUL C. COTTRELL, production foreman for Carter Oil Company at Seminole, Oklahoma, has moved to Guthrie, Oklahoma.

THOMAS A. MILLER, formerly in the Scouting department of The Pure Oil Company, is now an instructor in the Infantry School at Fort Benning, Georgia. the largest infantry school in the world. Since reporting for army duty last December, Miller has received a promotion from captain to that of major. During October, he graduated from the Battalion Commanders and Staff Officers Course at the Fort Benning Infantry School, and after returning to his old post at Fort Huachuca, Arizona, for a short time was ordered back to Fort Benning as an instructor in the school.

R. L. WALES, engineer for The Texas Company, has moved from Parkersburg, West Virginia, to Carbondale, Illinois.

JO H. CABLE and **TY DAVISON,** consulting petroleum engineers of Wichita Falls, delivered a paper on "Repressuring of the Loma Novia Field, Duval County, Texas" at a special meeting of the South Texas Geological Society December 4, at Corpus Christi.

HARRY L. EDWARDS, Houston drilling contractor and vice president of the American Association of Oilwell Drilling Contractors, will address the Petroleum Engineers Club of Texas A. & M. College, December 11. He will speak on phases of the drilling industry.

J. RUDY WRIGHT, chief gauger for Magnolia Petroleum Company, pipe line department, in the Salem District, Illinois, has been transferred to Midland as production and pipe line scout in the New Mexico-West Texas District.

T. I. PHILLIPS has been elected vice president of Westinghouse Electric and Manufacturing Company. He started with the company as tool make in 1915 and has been assistant to the president since February, 1941. A native of London, England, Phillips was educated in Lynn, Massachusetts, public schools. One of his early accomplishments was his work on tooling and equipment at the Chicopee Falls, Massachusetts, plant. He later was made general foreman of the tool department, and held successive higher jobs until his latest appointment.

GEORGE COX, who served Continental Oil Company in the production department 34 years, recently retired. Cox joined the Continental organization November 1, 1907, at Florence, Colorado, as a rig builder and tool dresser. He was made production foreman at Salt Creek, Wyoming, in 1924, and received several promotions before his transfer as district foreman of the Rocky Mountain division with headquarters at Shiprock, New Mexico, in 1939. He spent 10 years in the Colorado oil fields before joining Continental. His home is at Santa Ana, California.

CRAWFORD DAILY, Daily Crude Oil Company, Alma; James C. Graves, Basin Oil Company, Saginaw; S. J. Higelmire, Freeman Oil Company, Lake George; Arthur H. Ledbetter, McClanahan Oil Company, Mt. Pleasant; Walter Leonard, Rowmor Corporation, Mt. Pleasant; James T. Norris, Lenoran Petroleum Company, Grand Rapids; Fred W. Turner, Turner Petroleum Corporation, Mt. Pleasant, and J. V. Wicklund, Mogul Oil Company, Detroit, were re-elected directors of the Oil and Gas Association of Michigan, December 1.

Newly elected directors are: Edward Bouwsma, Commonwealth Pipe Line Company, Muskegon; Guy W. Chapman, Chapman Oil Company, Mt. Pleasant; M. Bliss Keeler, Lansing; Byron MacCallum, Grand Rapids; C. L. Maguire, Roosevelt Oil Company, Mt. Pleasant; Walter Russell, Mt. Pleasant.

Directors will meet at Mt. Pleasant December 10 to elect officers for 1942.

LEE C. LAMAR, manager of the Michigan division of The Carter Oil Company, announced transfer of offices from Saginaw to Mt. Pleasant.

ALEXANDER FRASER of New York, president of Shell Oil Company, visited Shell offices in Houston last week.

E. V. S. LOWERRE, Pure Oil Company scout in the Southwestern producing area, has been elected president of the Oklahoma Oil Scouts Association.

HARRY WILSON, JR., works manager of Jessop Steel Company, Washington, Pennsylvania, recently was made vice president in charge of operations. He joined the company in 1905. R. J. Murray, secretary, also has been elected assistant treasurer.

JOHN R. SUMAN, vice president of Humble Oil & Refining Company, and president of the American Institute of Mining and Metallurgical Engineers, was honored by the Gulf Coast section of the A.I.M.E., Houston, December 5 at a dinner meeting at the River Oaks Country Club.

PRIORITY FORMS

PD-25C PD-73
PD-25D PD-83A

IN STOCK AND AVAILABLE FOR IMMEDIATE SHIPMENT

Form PC-25C (revised) is provided as a replacement of the original Affidavit PD-25C. It is for use by those who give to their suppliers a monthly statement of the percentage of the previous month's dollar volume which was for Defense, as defined in the Defense Supplies Rating Plan.

Form PC-25D is provided as a replacement for those who have been using the affidavit as identification for **individual purchases** and who have shown thereon the number of the Order or Certificate assigned a preference rating under which the material covered by that individual order was to be used. For your convenience the new form is a **Customer's Certificate of Defense Requirements** instead of an **Affidavit.**

Form PD-73 pertains to the shipment of steel under Preference Order No. M-21.

Form PD-83A pertains to deliveries of steel from warehouse stock during first quarter of 1941.

★

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Squeaks from the Bull Wheel

Wrecker

The woman autoist posed for a snapshot in front of the fallen pillars of an ancient temple in Greece.

"Don't get the car in the picture," she said, "or my husband will think I ran into the place."

Detail of Importance

It says here in the paper that an astrologer predicts that the world will come to an end by Christmas.

Will it be before or after dinner?

No Specialist

"Is your husband a book-worm?"

"No, just an ordinary one."

Old-Fashioned Pun

"How tall was that famous old Indian hunter?"

"Oh, I imagine he was about six feet in his stalking feet."

Waxing Fat

A priest had been transferred from one parish to another. One of his old flock met one of the new.

"Well," he said, "and how do yez like Father Murphy, Dennis?"

"Ah, to be sure," answered Dennis, "he's a fine man; a fine man, but a trifle bellicose."

"Bellicose, is it? Well, if that isn't queer. When we had him, he was as thin as a rail."

Most Probably

When we are married I shall expect to have at least 3 maids.

Darling, you shall have many more than that, but only one at a time.

Back Up

"I don't need none!" said the lady of the house before the agent had opened his mouth.

"How do you know? I might be selling grammars."

It Would Help

"Your fiance is really a charming fellow. He seems to have that certain something."

"Yes, but I'd rather he had something certain."

Architect's Helper

"Now if you'll give me a general idea of the kind of house you need—"

"Well, we want something to go with an antique door knocker my wife brought home from Mexico City."

Spilled It

"Daddy, if you give me a dime I'll tell you what the iceman said to mamma."

"O. K., son, here's your dime."

"He said, 'Do you want any ice today, lady?'"

Unavoidable

Two elderly members, meeting at the club the first time in years, stopped to greet each other. Said one to the other, who was partly deaf:

"I was sorry to hear of the death of your wife."

"Hey? I can't hear you. What did you say?"

"I'm sorry you buried your wife."

"Oh, yes, but I had to bury her. She died."

Short Story

Mistress (hearing crash in kitchen): "More dishes, Mary?"

Mary: "No, ma'am—less!"

Labor Saving

An engineer, building a railroad in Mexico was trying to show a native how much the railway would benefit the country.

"How long does it take you to carry your produce to market at present?"

"With a mule it takes three days."

"When this railroad is in operation you will be able to take your produce to market and return home the same day!"

"Very good, Senor. But what shall I do with the other two days?"

Last Stop!

A gentleman slipped on the stair of a subway and started to slide down to the bottom. Half-way down, he collided with a lady, knocking her down, and the two continued their way together.

After they had reached the bottom, the lady, still dazed, continued to sit on the gentleman's chest. Looking up at her he said politely:

"I'm sorry, madam, but this is as far as I go."

Same in Any Language

Waiter: "Would monsieur prefer French, Spanish or Italian cooking?"

Diner: "I don't care, so long as you bring me a soft-boiled egg."

Gotkool
WATER CANS
& COOLERS
GOTT Water Cans are the practical way to keep drinking water cool for long periods, protected from impurities and always handy to the job. Snug fitting large removable top, strongly built to withstand rough usage. GOTT Water Coolers have extra large covers and a handy non-leaking push button faucet. Your Supply Store has them, get one today! . . . . . .
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H. P. GOTT MFG. CO.
WINFIELD, KANSAS
KEEP PURE DRINKING WATER ALWAYS HANDY

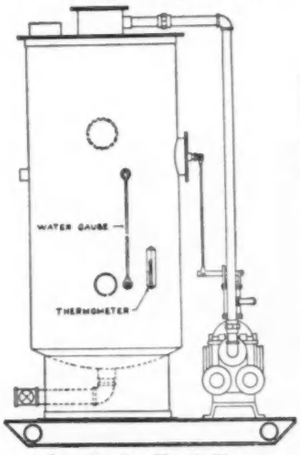
NOTES FOR THE Equipment Buyer and User

Boiler Feed Heater

ATLAS ENGINEERING WORKS

Atlas Engineering Works, 5206 Navigation, Houston, has announced a compact, portable and economically operated boiler-feed-water heater.

A continual intake and output of water assures a constant temperature ranging between 175 to 210 degrees with a capacity from 35 to 120 gallons per minute.



Atlas Boiler-Feed Heater

A large percentage of scaling trouble is eliminated by settling trays and a filter which removes foreign matter that acts as a bonding agent. Scale and sediment which settles at bottom of the tank is blown off through a drain valve.

Exhaust steam from either drilling engine or boiler-feed pumps is used for preheating the water. A thermometer is attached to the heater that gives an accurate reading of water temperature going to the boiler-feed pumps.

Water level is maintained by a duplex, horizontal piston pump and the temperature is controlled by the operator. When cleaning is necessary, inside of heater can be lifted out, filter changed or cleaned and trays descaled and then reassembled.

Workover Rig

OIL COUNTRY SPECIALTIES MANUFACTURING COMPANY

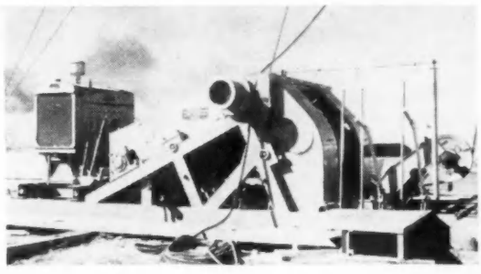
Oil Country Specialties Manufacturing Company, Coffeyville, Kansas, has announced a unit built to work well as a cable tool or a rotary workover rig and utilizing the principle and flexibility of a steam-driven machine.

It can be changed from a cable-tool workover rig to a rotary workover rig within 30 minutes and vice versa. For cable-tool work the machine is designed for drilling, spudding, swabbing and bailing operations. For rotary work it is designed to do anything that might be necessary.

Speed flexibility against varying weight and load conditions is a feature of the "Workover Rig." By the use of a twin disc torque converter the line speeds increase as load decreases, thus permitting speed to be automatically increased as much as 5:1 without changing ratio. Likewise, the pull can be increased in any given speed by as much as 5:1 without changing ratio.

Speed can be changed, it is claimed, without shutting down. The operator merely goes from high to low on the hoist drum by throwing out one friction clutch and throwing in the other. The unit has no gear box or strip.

Even the sand reel has two speeds. Line speed can be increased as much as 5:1 in either one of the two speeds. The spudder arm drive has two speeds



OCS Workover Rig showing control side

which permits drilling and agitating from 6 SPM up with engine running at satisfactory operating speed.

Control Devices

The Brown Instrument Company, Philadelphia, has issued catalog 8301, "Industrial Control Devices," a comprehensive source of information for those interested in learning how production may be increased, costs lowered and product quality improved through judicious use of automatic control of industrial processes.

Wrench

J. H. WILLIAMS & CO.

J. H. Williams & Co., 225 Lafayette Street, New York, has recently added a structural box pattern wrench to its line of chrome-molybdenum "Superrenches." The wrench is designed to bring greater safety to structural work. The 12-point box head insures a firm hold on the nut and the offset handle provides maximum clearance. The long tapered handle provides ample

Williams Wrench

strength and leverage and is of the type preferred by steel workers for lining up bolt holes. These wrenches are available in 6 sizes with openings 1-7/16 to 2⅜ inches, accommodating U. S. standard nuts ⅞ to 1½ inch. They are forged from chrome-molybdenum steel, heat-treated, and finished in baked gray enamel over-all.

Motor Starter

General Electric Company, Schnectady, New York, has issued publication GEA-3660 explaining in detail the design, construction, and application of the new General Electric 2300-volt contactor motor starter which can be safely applied to high-capacity power circuits.

Rinehart's Issues North Texas Survey

A statistical survey of oil fields of North and North Central Texas, "North Texas Oil," was issued recently by Rinehart's Oil Report.

Containing 342 pages and a number of maps, the book discusses developments in 42 counties, 31 of which have produced oil or gas in commercial quan-

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that Martin-Decker doesn't build tool-pusher model weight indicators and mud gauges just to be making them. They have a valuable place in many oil field operations.
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tities, and exploration has taken place in nearly all of the others.

Under the classification now in use by the Texas Railroad Commission, the counties constitute districts 7 and 9, and a portion of district 5. The report is concerned with approximately 500 oil and gas fields which have been developed within the territory between Red River on the north and the Colorado River on the south, and which have produced more than a billion barrels of crude oil.

McEvoy Company Names Zorgdrager Sales Manager

Morey Zorgdrager, formerly assistant sales manager for McEvoy Company, Houston, has been promoted to sales manager. A. Henderson, formerly sales manager, is now vice president and operating manager of the McEvoy plants.

Zorgdrager received his degree in chemical engineering from the University of Colorado in 1929. He worked in the research department of the Gulf Production Company and then became district engineer for the Texas Railroad Commission. From a position as sales manager of the Universal Engineering Company, he went with the McEvoy Company in 1935.

Concurrent with Zorgdrager's promotion, McEvoy Company announced a redistribution of McEvoy salesmen to improve service. Fritz Krause covers the East Texas and northwest Louisiana areas. His headquarters are at Kilgore. Bill Culver, with headquarters at Alice, now serves the Southwest Texas area. E. D. McMurry serves the Houston territory. Jerry Faubion covers the Gulf Coast area of Louisiana.

MOREY ZORGDRAGER

Standco
NO-SMOKE
STANDCO BRAKE LINING
nothing novel—no bunk—but it gets the job done without scoring brake rims. See page 2342 Composite Catalog.
Standco Brake Lining Co.
HOUSTON

Advertisers' Index

In the following index is shown only the advertisers having advertisements in this issue.

*Abercrombie Pump Co. 60
Airline Valve and Machine Works. 70
The Louis Allis Co. 41-43
B and W, Inc. 69
*Baash-Ross Tool Co. 31
Wm. M. Barret, Inc. 68
*Cameron Iron Works, Inc. . . . IV Cover
*Chain Belt Co. 53
The Continental Supply Co. 1
*The Cooper-Bessemer Corp. 23
Crane Co. 4
W. H. Curtin & Co. 69
Fort Worth Laboratories 69
The Four Wheel Drive Auto Co. . . 35
*Frick-Reid Supply Corp. 21
General American Transportation Corp. 2
Gokey Co. 69
*H. P. Gott Manufacturing Co. 72
*Gulf Coast Machine & Supply Co. . 68
Gulf Engineering Co. 70
Gulf States Utilities Co. 74
*Haynes Stellite Co. 59
Houston Laboratories 69
*Hughes Tool Co. . . . . I Cover
Industrial Electric, Inc. 69
Jarecki Manufacturing Co. 39
M. M. Kinley Co. 70
*Larkin Packer Co. 8
*The Thomas Laughlin Co. 58
Lebanon Steel Foundry 37
Lone Star Cement Corp. . . . . II Cover
*Martin-Decker Corp. 75
Mid-Continent Mud Co. 76
*Mission Manufacturing Co. 73
*Morse Chain Co. 50
National Bank of Tulsa 61
*Oil City Brass Works, Inc. 70
Oil Well Supply Co. 3
*The Parkersburg Rig & Reel Co. . . 33
*Patterson-Ballagh Corp. 63
*Pelican Well Tool & Supply Co. . . . 62
Reading-Pratt & Cady Division American Chain & Cable Co. . . . 27
*Reed Roller Bit Co. 24-25
*The Ridge Tool Co. 74
*Standco Brake Lining Co. 76
*Thornhill-Craver Co. 76
*Tretolite Co. 5
*Union Carbide and Carbon Corp. . . 59
United States Steel Corp. . . . . 3 and 29
*Universal Atlas Cement Corp. 29
*Wilson Manufacturing Co. . . III Cover
*Wisconsin Motor Corp. 63
York Oilfield Supply Co. 76
Youngstown Sheet & Tube Co. 6

* Indicates that detailed information on the manufacturer's products or services may be found in the 1941 edition of The Composite Catalog of Oil Field & Pipe Line Equipment.